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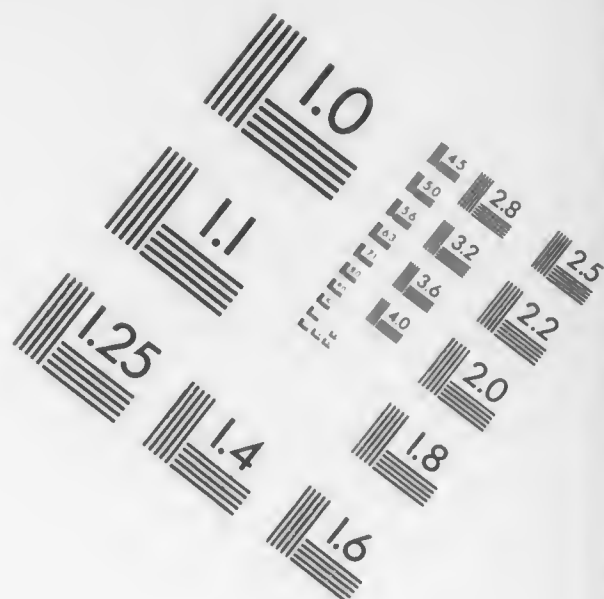
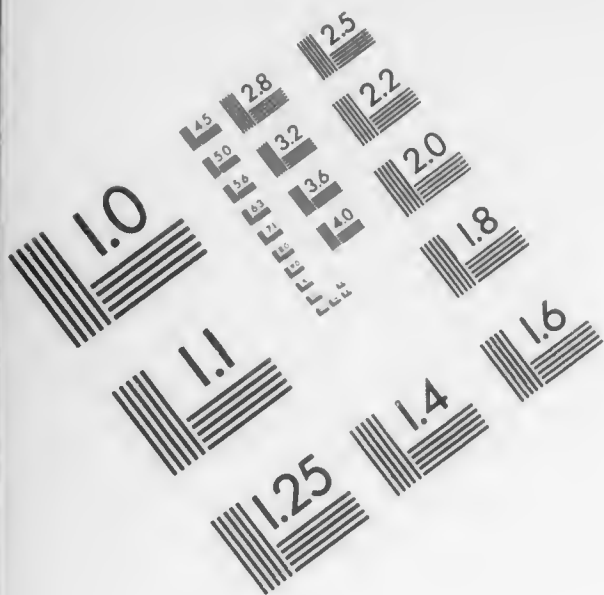
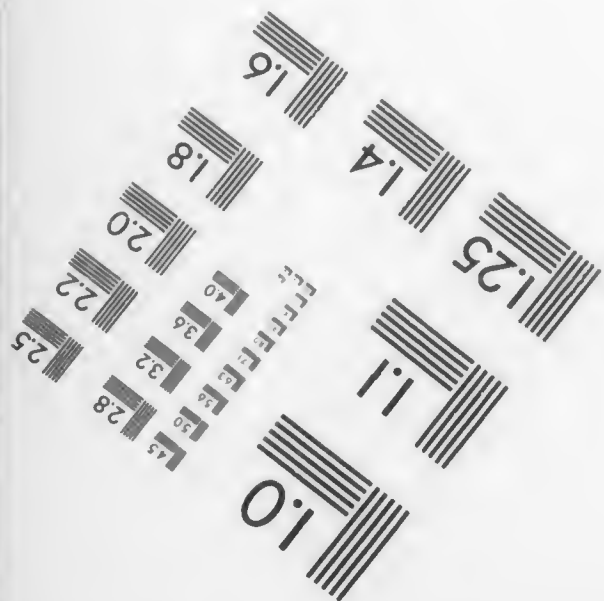
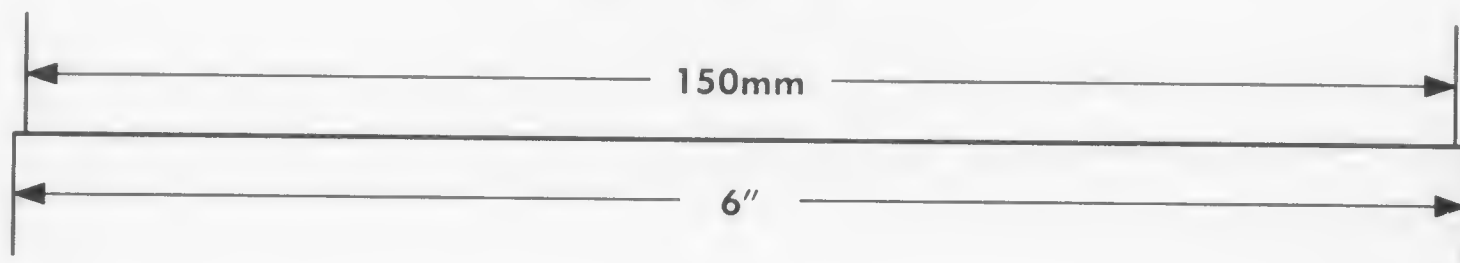
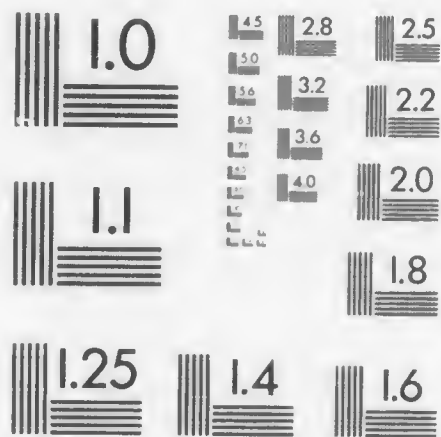
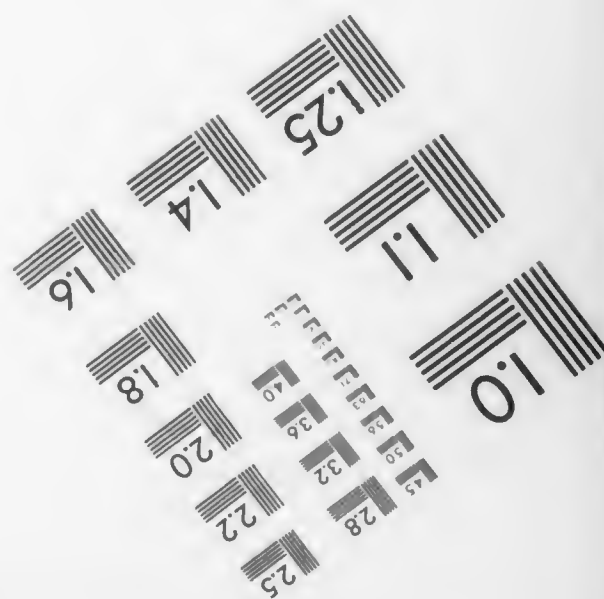


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Volume 49, 1921

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Number 1 PHILADELPHIA, PA., SATURDAY, JANUARY 1, 1921. Volume 48



Notes From National and Nearby State Granges

Extracts Showing the Drift of Farmer Sentiment on Public Questions

THE Boston session of National Grange had 29 states represented, those not present being Minnesota, Kentucky, Montana, Wyoming. The attendance far exceeded that of any previous session and the total will not be reached again in many a year. On Friday, when the two seventh degree classes were worked, there were from 15,000 to 20,000 patrons in the city, while the class of 1918 seventh degree candidates breaks all records of the Grange, while impressive distinction is achieved by the Grange in the fact that this is the largest class ever initiated on a single occasion by any fraternal organization in the history of the United States.

Action was taken on the following questions: Favoring "open shop" with guaranteed right to every man to work at any time and in any place he pleases.

Pledged full Grange strength against Japanese immigration as a menace to the farming industry of the United States.

Demanding repeal of the law exempting "conscientious objectors" from war service.

Strong pronouncement against race track gambling in any state.

Reaffirmed positive opposition to any more "daylight-saving" under national or state plan.

Opposed Nolan bid for big taxation scheme on farms above \$10,000 value.

Reiterated Grange adherence to principle of arbitration, but without endorsement of League of Nations.

Demanding lowering of war tax on telephone toll messages.

Demanding repeal of guarantee feature of E. C. Cummins railroad rate bill.

Reaffirmed Grange tariff declaration of equal protection for agriculture with all other industries.

Urged that labor and special agitators who threaten the peace, property or life of others shall be promptly imprisoned or deported.

Strong stand for right of collective bargaining and co-operative marketing of farm products.

Urged uniform co-operative laws in all the states.

Demanding some form of short-time credit for farmers to aid production and marketing.

Favored declaration of public welfare, with secretary in the president's cabinet—preferably a woman.

Reiterated Grange demand for effective pure fabrics law.

Opposed all water power monopolies and urged the creation of co-operative hydro-electric associations.

Sounded clear note for personal and public economy, especially in government administration.

Reaffirmed opposition to Lane Plan, but favored legitimate reclamation work in any state that can stand on its own merits.

Denounced the cigarette evil and pledged Grange efforts to correct it.

Strong taxation declarations, including adequate income and inheritance taxes; opposed general sales tax and any form of classification of discriminatory nature.

Declared that natural resources still in public ownership should be retained there for the benefit of all the people.

Advocated more extensive investment in thrift stamps, war savings stamps and Liberty bonds.

Voted to assist in bringing to the United States the International Dairy Congress in 1922.

Called for farm production cost survey and full report for benefit of agricultural plans ahead.

Demanding limit on motor trucks run over the highways and fast destroying same.

Approved Near East Relief project, and recommended it to support of subordinate Granges.

Favored such operation of air-nitrate plant at Muskegon Shocks, as shall get best fertilizer results for the farmers.

Pledged support against "moonshine" traffic wherever attempted.

Favored reduced parcel post rate for library books carried on rural mail routes.

Advocate standard containers for handling of fruits and vegetables.

Strong declaration for enforcement of present pure food laws.

Emphasized urgent need of big agricultural man at the head of national department.

Favored working towards a Grange legislative and administrative home in the city of Washington.

Reaffirmed policy of co-operation with other farm organizations.

PENNSYLVANIA STATE GRANGE

Pennsylvania State Grange held its annual meeting at Allentown, December 14-16, 1920. The attendance was even larger than usual and the class initiated in the sixth degree was the largest in the state's history, numbering nearly 1000 members. The reports showed that 52 new granges had been organized during the year. Seven juvenile granges were started and one Pomona grange organized. The net gain in membership was 8000, bringing the total membership up to 82,000 in the state. The following extracts are gleaned from the Master's address:

Condition of Agriculture

Agriculture is facing the testing time in these years. Following the civil war, and in fact ever since the thought and energy of this country has gone toward the developing of our industry, corporate property has had continuous preference in partial release from taxation; tariffs have been made to encourage industry, while the farmer was compelled to sell his product on the world's market and buy his supplies in an artificial market.

The war brought the question of the Nation's food-basket to the attention of all our people. The intimation was made that the farmers were morally bound to produce food enough to go round. Responsible? Yes! to the soldier in camp and trench, but to highly paid industry not a mite. Responsible? Yes! to the starving, made so by the cruel hand of war, but to the short-hoored operators and workers in other lines of production not a bit. The farmer is organizing as he has never done before, and by so doing is serving timely notice on this nation that either he will have a square deal or our cities will not be talking about daylight-saving, but will be considering saving the time to go to the table three times a day. The United States Senate, the President and the bankers of this country have perpetrated a crime on the agriculture of this country that will not soon be forgotten by well-informed farmers. The President and Senate in not adjusting their differences and passing the League of Nations and the Treaty has cost the farmer already billions of dollars in the forced slump that has arisen because we are still technically at war with Central Europe; Austria longing for milk and our condensed milk piling up here; Germany wanting 2,000,000 bales of cotton, and the one-crop cotton farmer staring bankruptcy in the face because we are shut off from the export trade that Great Britain is now so fully enjoying; wheat of several hundred millions of dollars with the world reserves the lowest ever and the crop below the average. To spend a twelve month quibbling over "the League" or "a League" in a world crisis has only one parallel in history—when Nero fiddled while Rome burned.

The drawing away of labor and of farmers themselves from the farms to the city would seem to better the general condition because of the reduction of competition that would be incident to a larger number of farmers, but the real situation is rather the opposite. For many years the inducements that have held our people to the farms have not been of a monetary kind. There is a fascination in the contact with Nature; there is a lure in the touch with growing things; there is a joy in handling domestic animals and caring for their young; there is an independence in the individual character of the farmer's work; and there is a satisfaction in the freedom from the artificialities of the city that is attractive to country people, and we hope that the financial end of the business will ever be such that these worthy inducements, together with adequate remunera-

tion for his toil, will always be sufficient to keep the same high-class of proud Americans upon our farms that have always been the bulwark of the nation's strength. But when there are abandoned farms, when the population is dwindling, when it is difficult to get the proper number of scholars and taxables for good schools, when roads are neglected because of small traffic, then these who are left feel the added isolation, and the community is given over to some class of people who have never known the candid and wholesome kindred and social ties of a well-to-do country community.

Some of Our Problems

The National Board of Farm Organizations has made splendid progress. During the year the Florida Citrus Association, the Farmers' Equity Union, and the American Society of Equity have taken membership, and negotiations are pending which if successful will add another large bunch of co-operators.

The two large organizations that have not associated themselves with the Board, and which are necessary to the completion of the voice of agriculture, are the National Grange and the Farm Bureau Federation.

Some of us who have watched the developments in these organizations believe we know why they do not come in and add their prestige and power to the common voice. Certain leaders in the National Grange we feel are much more interested in being the spokesmen of a single organization than to take chances in emerging their identity in a board of possibly able men. The Farm Bureau Federation, with its new leadership, is still filled with the hope that its organization will absorb all the others and become the one farm organization of the Nation. The National Grange had that dream a few years ago, but the Grange died in four states this year, and possibly those who were thus dreaming are now thinking that they had the nightmare. The Farm Bureau leaders, when they are more experienced, will also understand the impossibility as well as the futility of such a hope and will then get their feet on the ground and assist in a get-together that will not lose the identity of any of the organizations.

Every influence that the farmer can bring to bear will be needed in Congress to enact the Capper-Hersman bill, to prevent the taking off the graduation of the income tax and the destruction of the excess profit tax, to secure an adequate nitrogen supply, to prevent the laying of monopolistic tariffs, and to secure fair play for farm products. The assumption that free raw materials are beneficial to the nation forgets the fact that the hide which is the shoemaker's raw material is the farmer's finished product, that the miller's raw material is the farmer's finished product and that the spinner's raw material is the farmer's finished product. We must help to establish a policy which will retain the control of our forests and waterpowers that are in public ownership; we must re-establish our canals for cheap transportation and build roads to move commodities rather than for pleasure; must find a solution for transportation better than is found in the Esch-Cummins law. These are just a few of the big national problems facing us.

Problems as pressing confront us in this state. In transportation we see not only rates the highest we have ever known and service mighty poor, but privileges we have enjoyed for generations taken away without consulting the public by operators who were not nearly so economical when the emergency was so much greater. Some of us who are opposed to Government ownership are dumb-founded these days to think that we have to continue the operation of our railroads in the hands of the Executives, who though shifted around some, still handled the roads during the war.

Among the problems of interest to us in the State Legislature will be the repeal of the Brooks' High License Law and pass an enforcement law that will accord with the National Legislation.

(Continued on Page 14).

Soils and Fertilizers

Conducted by Dr. J. G. Lipman

Our readers are invited to send us their problems on soils and fertilizers and they will be answered by Dr. Lipman in this column.

NITROGEN IN RAIN AND SNOW

THERE seems to be some ground for the belief that winters of heavy snow fall are followed by good crop seasons. If this is true, then snow must have some properties of a direct or indirect fertilizer. It might be a direct fertilizer in the sense that it contains ammonia or other plant-food ingredients. It might be indirectly helpful by covering the fields with a protecting blanket that prevents damage to winter grain.

Students of soil fertility have been examining rain and snow in different localities for the purpose of finding out accurately how much fertility and what kinds of fertility these may be able to contribute to the land. The investigations on this subject go back to the early part of the Nineteenth Century when chemists tried to discover how much ammonia was contained in the air or to what extent such ammonia was usable by plants. For nearly a whole century chemists in France, Germany and England studied and debated this subject. Many of them believed that the supply of ammonia in the air was sufficiently large to furnish crops with all that they needed. In order to obtain reliable information on this subject, there have been established in a number of places in this country and abroad so-called lysimeters. Lysimeters are metal or concrete boxes or cans so constructed as to allow the collecting of the rainfall that passes thru the soil contained in them. These lysimeters have a



Ayrshire Bull Well Posed Makes an Attractive Appearance.

known area, so that it is possible to determine accurately the amount as well as the composition of the rain and snow that may fall on their surface. The lysimeter studies in different localities show that in regions where the annual rainfall is about thirty inches the amount of nitrogen per acre brought down is about four to six pounds. In some localities or in occasional seasons the amounts may be considerably larger, up to twelve or even fifteen pounds per acre. However, the average amounts, as indicated above, would be nearer four to six pounds per acre. Of this nitrogen about one-quarter to one-third is present in the form of nitrate and the rest in the form of ammonia. The question naturally arises whether this amount of nitrogen plays any significant part in maintaining a sufficient supply of this constituent in the soil. If there were such a thing as the accumulation of nitrogen, the continued addition of five pounds an acre would in the course of many years lead to the formation of a very substantial store of nitrogen in the soil. Unfortunately, however, the average acre of land loses much more nitrogen in the drainage than is contributed to it by the air. The analysis of drainage water show that in the humid region the drainage waters may carry away 25 to 30 pounds of nitrogen per acre. Occasionally the loss may be very considerably larger. Evidently, the addition of five pounds of nitrogen per acre is but a slight offset to the loss of 25 to 30 pounds of nitrogen per acre on cultivated land. While the contribution of ammonia and nitrates from the air is, therefore, not sufficient for maintaining a sufficient supply of nitrogen in the soil, it is more or less of an acid in helping to conserve an adequate supply of nitrogen in the soil. Other means

must be found for restoring more adequately the losses just noted. The laying of the land down to grass so as to decrease the amount of drainage water passing thru the land, as well as to decrease the amount of soluble plant-food carried away by drainage waters, is one of the means for checking the too rapid shrinkage of the nitrogen supply in the soil. Even more effective is the growing of crops that have the ability to use thereby the nitrogen content of the land. These crops are far more important than rain and snow



Guernsey Cow Nearly Dry, Yet Showing to Good Advantage.

as a factor in increasing and maintaining a sufficient supply of nitrogen in the soil.—J. G. Lipman.

Photographing Dairy Cattle

It is the usual practice when one has dairy cattle for sale to keep on hand a supply of pictures for the prospective purchaser in case he cannot personally see the animals. Too often, though, unless there is an experienced animal photographer available no pictures are taken as the average breeder thinks that the chance of getting a good picture is too uncertain or that the task is too difficult for him to undertake. After a little practice, however, most any one can take satisfactory pictures of dairy cattle providing he realizes that the object of the picture is to show the more important things which one would look for if he could examine the animal personally.

With this in mind the following points are suggested as being desirable to keep in mind in the photography of dairy cattle.

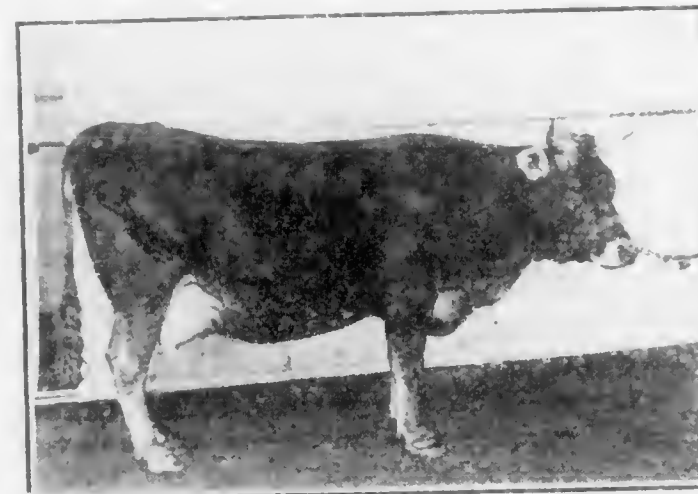
1. The picture should show the animal as natural as possible.

2. A few minutes used in brushing the hair and combing the switch will be well spent. If possible clip the long hairs on the udder and belly to better show the shape of the udder and size and length of milk veins.

3. A side view is most desirable in order to show the top line, length of body, appearance of head and mammary development.

4. Choose a background that will not distract one's attention from the picture of the animal.

5. Do not use a background of anything that has lines that run parallel with the animal's back, as the straight lines may bring out too prominent-



Poor Picture of a Tynp Brown Swiss Cow. Cow Standing on Sloping Ground Together With Line Parallel to Back Makes Top Line Appear Weak. Well Shaped Udder Does Not Show.

ly an apparent weakness in the back or drooping of the rump which may not be a severe defect in the animal's conformation.

6. Be sure the animal stands on level ground and that the feet are so placed that all can

be seen from the camera with one hind foot far enough behind the other as to show the shape of the udder and placement of teats.

7. To best show the side wedge of barrel and emphasize the depth of rear abdomen of the dairy cow, place the camera closer to the rump than the head. When photographing a bull place the camera closer to the head, thus emphasizing the masculinity as indicated in the fore quarters.

8. Just before the picture is taken attract the attention of the animal so that the head will be held up and turned slightly toward the camera showing the appearance of the face.

9. Choose a bright day as it insures a more distinct picture showing the animal to greater advantage.

10. It is much easier to tell how a picture should be taken than it is to take it. The ability to secure good pictures requires patience with the animal and skill in getting them to stand correctly.

11. It does not pay to retouch pictures. It is better not to make a sale than it is to sell on the strength of a retouched photograph and take chances of making a dissatisfied buyer.—A. L. Beam, State College, Pa.

POISON BAIT, RIGHTLY USED, KILLS RATS

With the time at hand when rats flock to the barns, poultry houses, and to the cellar if they can, many farmers are asking what they can do to get rid of the "pesky nuisances."

Poison bait is said to be the best way to deal with the rat nuisance. But rats soon learn to avoid any particular kind of poisoned bait, and therefore they should be given a variety. One should use at least three different kinds of bait and more if convenient—one a grain, one a meat or cheese, and one a vegetable.

It is better to offer them the bait without



Undesirable Background Distracts From Heifer Appearance.

poison first and then alternate poisoned and unpoisoned until the rats are killed. A formula for killing rats recommended by the biological survey of the United States Department of Agriculture is made by mixing one part of barium carbonate to four parts of bait or, if it cannot be conveniently mixed, sifting it over the surface of the bait and rubbing it in.

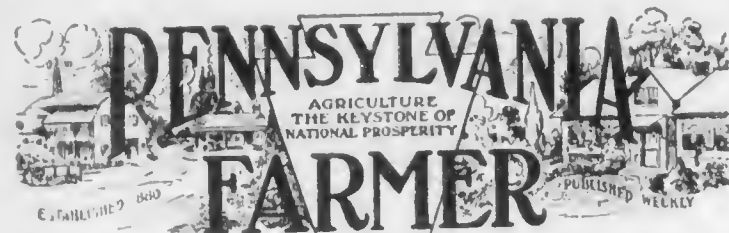
Since barium carbonate is poisonous to children and domestic animals, care should be used in placing it. The bait should be inspected daily and any not eaten replaced by a bait of another kind.

One thing which needs pointing out, is that even if one's buildings are rat proof, if the rats are permitted to breed anywhere on the premises there will be trouble.

ALFALFA, \$83 AN ACRE

Seventeen acres of alfalfa grown by J. C. Beeton, Coleman Switch, Kansas, produced about seventy tons of hay last summer. The crop was all No. 1, and worth \$1500 when harvested and put into stacks. There were four cuttings, which was not unusual for that part of the country. The hay was sold loose in the stack. Mr. Beeton and his sixteen-year-old son harvested all the crop, cut it and stacked it without rain doing any damage. The total yield averaged a little more than 17 tons to the acre, and this sold for better than \$20 a ton. Where can you get a crop that will beat alfalfa?—E. A. Kirkpatrick.

It is declared that the bagpipe is the oldest musical instrument in the world. That must be why its joints squeak so.—Los Angeles Times.



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NEFF LAING, Manager
 HARRIET MASON, Household Editor

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 DR. JACOB G. LIPMAN
 DR. W. B. TOMHAYE

DR. L. P. STEWART
 DR. W. C. FAIR, V.S.

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 VOLUME 48 NUMBER 26

OUR JOB is to serve our readers. Whenever you are
 puzzled, write to us and we will help you if we can.
 —The Editors

Righteousness is even more needed than prosperity.

Profitable Pastime

WE START the New Year with the prospect
 of more nearly normal conditions in trade
 and transportation than have existed for several
 years. We believe it will be possible to get farm
 supplies with reasonable certainty and promptness
 but in spite of this prospect we would urge
 the farmer to place orders. Fore-handled farmers
 endeavor to plan their year's work early in
 the year and secure full information on the sup-
 plies which they will need. There is no more
 profitable work for the winter months than a
 careful study of farm books, farm papers and
 last but not least, catalogues and price-lists. The
 art of advertising has reached such a high de-
 gree of excellence that a careful study of adver-
 tising matter is well worth while for the infor-
 mation received. As one subscriber recently
 wrote: "I frequently learn as much from read-
 ing advertisements in a magazine as I do
 from a text matter." Even though it is likely
 that freight and express will be moved with
 greater promptness than in the past, orders for
 implements, supplies, etc., should be made out
 early and sent in so as to be on the safe side.
 General practice of this advice will also help to
 keep the wheels of industry running and lessen
 the danger of a business stagnation.

Learn To Keep The Law

IN SUMMING up the moral and religious status
 of the people at the close of the year, concern-
 ed investigators find little to encourage them in
 this respect. Contrary to a very popular belief
 during the war, the experiences and results of
 the conflict did anything but increase moral-
 ity, reverence and religious fervor. Thoughtful
 people of all classes, whether their profession is
 that of the church or not, are seeking to find
 the cause of the present condition and a remedy
 for it. Many are of the opinion that the prin-
 ciples of morality and even of religion itself have
 been so superficially taught and too lightly re-
 garded during the past generation or two. The
 tendency seems to have been to make life as
 easy as possible and to relieve the individual of
 definite responsibility. We need a revival of the
 old-time appreciation of character and of the
 principles of which character is developed. It is
 no more possible to develop manhood and woman-
 hood if real worth without the practice of self-
 denial and the control of impulse than it is pos-
 sible to grow a crop of corn without the appli-
 cation of intelligent labor. Without the quali-
 ties that result as a practice of these virtues the

Pennsylvania Farmer

individual is like a boat without a rudder—cast
 this way and that with every wind and wave.
 Let us teach with a greater definiteness that "Sin
 is the transgression of the law and sin, when it
 has conceived, bringeth forth death."

The Dawning

IN SPITE of the dark financial skies and the
 muzzling heard on every hand there are
 many signs that the dawning of better times is
 at hand. The rapid reduction in commodity
 prices forecasts more general buying and this in
 turn will stimulate production which has been
 greatly reduced during the last six months. When
 the public got over its spree of reckless buying
 at profiteering prices some six months ago, and
 realized its prodigal practice, it suddenly quit,
 leaving immense quantities of goods which were
 produced at high cost and marked up at war
 prices on the shelves and in storage houses. Cancellation of orders became a common practice be-
 cause retailers found they could not dispose of
 goods at old prices. It is estimated that the mer-
 chandise in warehouses, piers and railroad cars
 held because of cancelled orders would amount
 to three billion dollars. The only reason it has
 not moved on to its destination and into the
 hands of consumers is because the public rebelled
 against prices.

But the old prices are giving place to new
 and lower prices. The goods are needed and will
 be purchased as soon as this takes place all along
 the line, provided the public does not lose its
 buying power thru unemployment. There is light
 at the horizon. The dawn gives evidence of be-
 ing at hand by the lowering of prices in every
 line, and as soon as the holiday season is past it
 is almost certain that we will see a decided drop
 and a resumption of normal buying. No sensible
 manufacturer or merchant expects the prices of
 1917 to 1920 in prevail in 1921, and it would be
 equally foolish for farmers to expect it in their
 business. While the slump hit the farmers first,
 every business is sooner or later affected in the
 same way and in the end a common and fair price-
 level will be established. The only thing needed
 to restore normal conditions is for everyone to
 keep on producing, charge fair prices and prac-
 tice steady, sane buying.

Editorialets

WE DOUBT very much the efficacy of the cur-
 rent bills being introduced in Congress for the
 relief of agricultural conditions. With the
 superficial knowledge at hand and in view of the
 world's trade condition and its cause, the pro-
 posed tariff increases on agricultural products, the
 talked-of embargoes, and the changes in the Fed-
 eral Reserve Bank's policies appear to us as quack
 remedies. They will not relieve the situation and
 may compromise farmers at a later date.

All who heard Commissioner Pinchot's report
 at the Pennsylvania State Grange are no doubt
 better informed as to the present condition of
 the Forestry Department as well as to the im-
 portance of developing state forests than they
 ever were before. The American peoples' hand-
 to-mouth policy in supplying their needs from
 the natural resources, together with their gross
 carelessness and criminal waste, has brought them
 face to face with a lumber famine. Since the
 country's consumption of lumber is four times
 the annual growth at present it does not require
 even a son of a prophet to foretell what is com-
 ing unless there is a speedy change in practice.
 It is another illustration of our hind-sight being
 better than our foresight.

The man or woman who has no other motive
 in taking products to a fair or products show than
 merely to get a prize fails to get the best out
 of such an opportunity, even though they receive
 the first premium.

It is at least encouraging to learn that the
 chairman of the Association of Railway Execu-
 tives says he knows of no movement on the part
 of railroads to ask for an increase of rates in the
 near future. Perhaps this concession is as much
 as the public could expect, but we must remem-

ber that since the railroads have the govern-
 ment's guarantee of a minimum rate of income
 the public is in for making up a deficit of about
 \$600,000,000. In the light of this fact their
 magnanimity shrives.

In spite of the discrepancy in incomes of farm-
 ers, and tradesmen and laborers during the past
 three years the average farmer is better off at
 the beginning of the year 1921 than is the aver-
 age man in other callings. The present period
 of depression shows that the big wages were,
 in most cases, spent as fast as they were made
 and tens of thousands of the prodigates are out
 of money and out of a job. On the other hand,
 the farmer has his job, a good living and a rea-
 sonable certainty of good times ahead.

It is again time to call attention to the ad-
 visability of taking a farm inventory and start-
 ing a simple but comprehensive system of keeping
 farm accounts. We are convinced that it is not
 because the proposition is impossible but it is
 because farmers, having never practiced it, are
 neglectful in the matter of setting down each
 evening the transactions of that day. Try it this
 year and see how satisfactory and profitable the
 practice is.

Our Washington Letter

After a lengthy debate the House passed the
 Fordney emergency tariff bill Wednesday night,
 by a vote of 196 to 86. It was supported by
 many representatives from the Southern States
 west of the Mississippi and was opposed by sev-
 eral congressmen from Eastern industrial centers.

It was admitted by Representative Fordney,
 of Michigan, who reported the bill out for the Ways
 and Means Committee, that it was not scientific,
 but he maintained that it would afford the farm-
 ers and stock raisers immediate relief and save
 agriculture. It imposes high tariff duties on some
 twenty agricultural products for a period of ten
 months, by which time, it is believed Congress
 will be able to enact a scientific tariff similar to
 the Payne-Aldrich schedules.

The opposition declared that the measure,
 which provides higher tariff rates on some prod-
 ucts than the Payne-Aldrich law, will not help
 the farmers, and that its only effect will be to
 give the retailers opportunity to boost living
 costs. Several Eastern members who voted for
 the bill, opposed it on the floor of the House,
 saying they would not vote for it if they had the
 remotest idea that it would be enacted into law.
 The opinion is quite strong in and out of Con-
 gress that the farmers' relief tariff bill will not
 pass the Senate.

The American Farm Bureau Federation is
 backing a plan, which includes the granting of
 American credit to Germany of around one bil-
 lion dollars, to be authorized by the reparations
 committee under the Treaty of Versailles. It is
 proposed to amend the War Finance Corpora-
 tion measure so as to make this proposition ef-
 fective. It is claimed that sentiment is quite
 strong in both branches of Congress for a move
 of this kind. President J. R. Howard and other
 federation officials are in Washington for the
 purpose of studying and developing this plan and
 explaining the proposition before the House and
 Senate Committees on agriculture and banking
 and currency.

The present emergency tariff bill prescribes the
 following rates of duty on farm products: Wheat,
 30 cents per bushel; wheat flour, 24 per cent ad
 valorem; corn, 15 cents per bushel; beans, 2
 cents a pound; peanuts, 3 cents a pound; pota-
 toes, 25 cents per bushel; onions, 40 cents per
 bushel; rice, 2 cents per pound; lemons, 1 cent
 per pound; peanut oil, 26 cents per gallon; cot-
 tonseed, coconut and soy bean oil 20 cents per
 gallon; cattle, 30 per cent ad valorem; sheep, 32
 per head; lambs, \$1 per head; fresh mutton and
 lamb, 21 cents per pound; cotton, 7 cents per
 pound; manufactures of cotton, 7 cents per pound
 in addition to present rates; wool, unwashed, 15
 cents per pound, washed, 30 cents per pound,
 scoured, 45 cents per pound; manufactures of
 wool, 45 cents per pound in addition to the rates
 of duty now prevailing. This tariff is to remain
 in force for a period of ten months.

In the House conference a California con-
 gressman, asking for a tariff of eggs and frozen
 meats, said the California poultry men were be-
 ing driven out of business by importations of
 cheap eggs from China, and that meat producers
 were being crowded out by heavy importations of
 frozen and refrigerator meats from Australia and
 New Zealand.

The Young-Tincher bill to use \$100,000,000 of
 the profits of the Federal Reserve Board system
 in loans to live stock owners, is one of the lead-
 ing propositions by which farmer leaders in Con-
 gress are attempting to relieve the farm credit
 situation in the West.

January 1, 1921.

The Washington representatives of the farm-
 organizations feel that the Capper-Volstead bill
 designed to establish the legality of farmers' co-
 operative marketing associations, as passed by
 the Senate, leaves much to be desired. The opin-
 ion is freely expressed that it will hinder instead
 of promote co-operative marketing. One man, who
 is the head of a large California co-operative mar-
 keting association, says this measure will put
 out of business every market milk producers' as-
 sociation and several of the co-operative mar-
 keting organizations in California.

The American Farm Bureau Federation Wash-
 ington office is directing its attention to the
 three things necessary to relieve the situation—
 a tariff to keep foreign grown products out, ex-
 tension of credit to farmers until there is a re-
 adjustment of prices and market conditions, and
 a buying campaign. The country is now up
 against a buyers' strike. Anything that can be
 done to encourage more extensive buying will
 afford a degree of relief. In the case of wheat,
 millers and bakers are down to the bottom of
 the bins. A "buy a barrel of flour" movement
 if it would soon create a demand as large as at
 the farmers' throut the country would each buy a
 barrel of flour, it would greatly help the market
 situation.

The Bureau of Animal Industry calls attention
 to the fact that of the 695,364 cows officially
 tested for tuberculosis during the last fiscal year,
 28,616 reacted, and were removed from the herds
 tested. The number of herds accredited as free
 from the disease was three times as large as at
 the end of the year as at the corresponding time
 a year ago.

The "Better sires, better stock" campaign pro-
 moted by the Bureau of Animal Industry, is being
 pushed vigorously all over the country. It is the
 aim of the movement to get rid of inferior sires.
 The state extension forces and farm bureaus are
 co-operating with the bureau in this work. The
 bureau now has on file 3,200 names of live stock
 owners who have signed an agreement to keep
 pure-bred sires for all kinds of stock they raise
 and to follow breeding methods leading to fur-
 ther improvement. These men own collectively
 400,000 head of live stock. Virginia, Pennsyl-
 vania and Nebraska are especially active in live
 stock improvement. The movement has also ex-
 tended to Porto Rico and the island of Guam.
 Two associations in Rhode Island are working
 to rid the entire state of scrub animals.—Elmer
 E. Reynolds.

HARRISBURG LETTER

Agricultural Recognition.—More extended
 recognition for the work the State Department of
 Agriculture is doing for the advancement of food
 production in Pennsylvania along educational,
 supervisory and research lines will be asked of
 the next Legislature. The Governor plans to deal
 with the department on a basis that will make it
 rank with the educational, highway and welfare
 activities of the state and to ask that appropri-
 ations to enable it to continue its work and to
 take an advanced position in various branches of
 helpful endeavor be voted. The Governor, who
 owns several farms and is heavily interested in
 Pennsylvania orchards, has been personally ob-
 serving what is being done in the way of en-
 abling people in charge of such enterprises to
 market products, combat pests and secure seeds,
 fertilizers and other supplies as paid for. The
 Governor has also followed closely the surveys
 which Secretary Fred Rasmussen has conducted
 and which are bringing to the farmers and busi-
 ness men of the state the facts regarding food
 supply and the great necessity of closer relations
 between the men who handle food and finances
 as well as the development of local markets.

Educators Have the Field.—Educators of the
 state have the field this week and considerable
 ventilation of the school system of the state, to-
 gether with some plain speaking regarding the
 teacher situation, the conditions in rural dis-
 tricts and other salient matters, appears to be
 the order of the day. Dr. Thomas E. Finegan,
 the state superintendent of public instruction, has
 taken occasion to call attention of the educators
 to the fact that no districts can be taken by the
 back of the neck and forced into consolidations,
 and that it is a matter of local self government
 for the people who pay the bill. The state, how-
 ever, will show as far as able the business side
 of it from the broader standpoint of the Com-
 monwealth.

Assembling the Laws.—The meeting of the
 teachers and some sessions proposed by repre-
 sentatives of the third class cities, the boroughs and
 the first-class townships will probably lead to
 some definite positions being assumed regarding
 new laws and from all accounts the next Legis-
 lature will be asked by people from the home
 districts to line up for changes. Just how far
 the officials of the boroughs' organization will get
 in their effort to clip the wings of the Public
 Service Commission is doubtful. They undertook
 something like that against the commissioner of
 health some years ago, but found the Governor
 had the "last bats" to use a baseball term. Some
 very useful codifications of the laws are being
 drawn up and there will also be started a move-
 ment to assemble all the laws of the state.

Pennsylvania Farmer

The State Milk Law.—Men interested in a bill
 to regulate milk in Pennsylvania will meet again
 in Philadelphia next Wednesday to discuss the de-
 tail of heat for pasteurization of milk, this being
 the one phase of discussion not completed at the
 conference here several days ago. There will be
 three grades of milk in Pennsylvania, certified,
 grade A or that from herds officially pronounced
 free from disease, and pasteurized milk. The De-
 partment of Agriculture will have charge of dairy
 inspection as far as the animals are concerned,
 but once a cow is milked the State Department of
 Health will supervise the product. This is work-
 ing out something which has been sought for
 years and which was nearly accomplished two
 years ago. State officials here are confident
 some agreement will be made with all in-
 terested parties and the law be passed without
 trouble.

The State Fair.—Pronounced impetuosity
 will be given to the State Fair proposition when
 the State Farm Products Show is held here next
 month. The show is going to be on a scale be-
 yond anything ever attempted and a bill for the
 state fair is said to be under preparation by in-
 terests not connected with the State Government.

Half a Million in Sight.—More than half a
 million acres of Pennsylvania desert can be
 bought by the state at rock bottom prices if the
 next Legislature is in tune with the conservation
 plans being discussed here. This land is mainly
 on mountains and hills and has an enormous
 potential value for lumber and water. Much of
 it has been actually offered to the state and the
 rest is available.

Fifteen Thousand Listed.—The State list of
 plants has been run to about 15,000 specimens and
 it is hoped in the next year or so to list every-
 thing native to Pennsylvania. The state plant
 thing native to Pennsylvania. The state plant
 industry and botanical authorities have made a
 drive against the weeds and valuable work to
 identify nuisances has been carried out.

Woman Can Hold Office.—Probably the most
 important decision in regard to public offices has
 just been given here by the new Attorney Gen-
 eral, George E. Alter, which officially determines
 that women are eligible to public office in Penn-
 sylvania. Several questions, which appeared for-
 midable, were raised, but Mr. Alter adopts the
 simple plan that the amendment changed it all
 and put women on the same basis of responsibil-
 ity as men.

Farm Work Hurts Attendance.—From all ac-
 counts, work on the farm is being unusually
 helped by the weather and farmers have been
 able to get labor without much effort for the
 first time in many months. December plowing
 has been going on in some southern counties and
 clearing up that was retarded by lack of labor
 in the summer and fall is going thru while spring
 preparations are moving on. The state of work
 has, however, materially affected attendance at
 farmers' institutes.

NEW YORK LETTER

Moving picture Shows Markets.—The State
 Division of Foods and Markets has completed a
 moving picture which will educate consumers as
 to the channels of transportation and distribu-
 tion thru which fresh fruits and vegetables pass
 before they reach the city table. The congested
 night markets in New York city are shown, the
 railroad piers, farmers' markets, the rushing long
 shored men and jobbers, retailers and truck drivers
 which hustle the food thru the city while the lat-
 ter sleeps. The film will be free to picture thea-
 ters, civic organizations and schools. Groups in-
 terested in securing it may write the Division at
 50 West Broadway, New York City. It will be
 a valuable help in bringing farmers and city peo-
 ple to a better understanding.

Survey of Rural Schools.—A survey of rural
 school conditions in one average county of the
 state has brought out such startling conditions
 that the joint committee on rural schools, with
 private funds, has hired one of the most noted
 educational experts of the country to make a
 wider survey for the guidance of the committee.
 The latter is working in full co-operation with
 farmers, and great results are expected to come
 from the investigation.

Rural Health Centers.—The coming Legis-
 lature will again be presented with a rural health
 center bill, which would create a health center
 in each rural community large enough to war-
 rant it, with specialists to diagnose disease and
 prescribe treatment, which may be carried out by
 local doctors. At a recent conference of 27 so-
 cial organizations the bill was discussed, and farm
 leaders were doubtful of its interpretation, that
 some rural people greatly need more adequate
 medical service. The handicap such an arrange-
 ment would meet would be the scarcity of spe-
 cialists and nurses and the absence of any state
 institution for the training of such workers. In
 one such health center in the state over 60,000
 people receive free medical advice annually.

Milk Matters.—At the first meeting of the new
 board of directors of the Dairymen's League a new
 president for the League was elected to succeed
 R. D. Cooper, who has served four years. The
 new leader is G. W. Slocum, of Milton, Pa., own-
 er of 3000 acres of land and 150 dairy cows in

Wants U. S. to Quit Barge Canal.—New York
 wants Federal control of the barge canal removed
 and barges now in operation sold to private cap-
 ital for continued operation. The state wants
 to develop the waterway which has so far been
 a useless but huge expense.

Free Mail Courses in Farming.—The State
 College at Ithaca is to give residents of the state
 free mail courses in agriculture in eight lines of
 farming. The only expense will be for text books.
 Advanced courses are also given and the regular
 college experts will correct the papers of stu-
 dents.

Fertilizer Question.—Farmers are worried not
 to buy fertilizers at the present exorbitant prices.
 Geneva Experiment Station finds that corn alone
 would have to bring \$11 to \$15 a ton in the field
 to make good on fertilizers bought at present
 prices, and oats would have to bring \$2 a bushel.
 These prices for fertilizers are unwarranted with
 the present outlook for farm crops.

Pennsylvania and New York.—The January price
 of milk to farmers, will be \$3.18, or the same
 as in December. This is an average price of
 \$0.727 per quart for average milk, and is at least
 a cent a quart under the actual cost of produc-
 tion. The pooling plan will be pushed as rapidly
 as possible.

Opposed to Excess Profits Tax Repeat.—H.
 E. McKenzie, a New York farm leader and chair-
 man of the American Farm Bureau Federation,
 opposes repeal of the excess profits tax, and the
 proposal of a sales tax, as being one based on
 consumers who cannot afford to pay. Only cor-
 porations are advocating the repeal, as the busi-
 ness wants to shift the tax to consumers.

Canning Crops Growers' Plans.—The work of
 developing the organization of canning crops
 growers has grown rapidly and expansion and
 perfection of the organization is the immediate
 program. An expert manager of the organiza-
 tion is to be hired, to devote his whole time to
 looking after the interests of growers.—G. E.

NEW JERSEY NEWS

Christmas Dinner Expensive.—Stork, and
 for the good things that went to make up the
 Christmas dinner of the average person in New
 Jersey caused the dealers to keep up the prices
 around previous high levels, and the result was
 that the feast was expensive. Jersey turkeys were
 somewhat scarce in various parts of the state.
 They retailed at from 70 to 72 cents a pound with
 exceptionally fine birds bringing as high as 80
 cents. Maryland and Western turkeys were brought
 in the markets for from 63 to 75 cents per pound.
 Ducks cost from 50 to 55¢. Ducks cost 50¢.
 Chickens cost from 45 to 50 cents per pound.
 The markets were replete with fine chickens and
 geese for from 45 to 50 cents per pound.
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 geese for from 45 to 50 cents per pound.

Illustrating Jersey Trees.—In order to pro-
 mote interest in local forestry, the New Jersey
 State Museum located in the State House at Tren-
 ton in co-operation with the State Department
 of Forest Conservation has made up several
 charts, which illustrate the trees of New Jersey.
 These charts are being used by the schools and
 community centers of the State in connection with
 other lending sets of the museum. They have
 been arranged by Miss Katherine Grayson, acting
 curator of the museum. In the special group
 of charts each one illustrates the foliage and
 fruits, a cross section of the wood, and a leaf
 made of the trees showing the grain of the wood.

Legislation Against Foxes.—Encouragement of
 the existence of foxes in New Jersey may be elimi-
 nated by legislation enacted at the 1921 session
 of the State Legislature opening here on January
 11. Several men of prominence are opposed to
 the raising of foxes in the state. Senator Hagaman,
 of Ocean County, in which is located the
 New Jersey State Game Farm, has declared that
 "the fox menace has become such in the State
 of New Jersey, that every means should be taken
 to exterminate the vermin." The Senator added
 that "in northern Jersey, there is a large class
 which actually encourages foxes to live. While
 I appreciate the pleasure that some people
 get from their sport, it seems to me that it ought
 to be secondary to the common weal. Good sports-
 men and farmers alike demand that something
 be done to remedy the evil." In reply to the com-
 ments by Senator Hagaman, Ernest Napier, pres-
 ident of the State Fish and Game Commission, has
 stated that club conditions in regard to foxes
 in New Jersey have been greatly improved.
 "When we looked into the matter some time ago,"
 said the commissioner, "we found that this club
 was turning loose sixty or seventy foxes a year.
 A law was passed in 1919 prohibiting the keep-
 ing of foxes in captivity or liberating them, but
 there is still much work to be done along this
 line.—Kelly, Trenton, Dec. 27.

"I can't understand," said the tactful youth,
 "why you two girls are so inseparable, when one
 of you is so beautiful and the other is so homely."
 "Whereat each of the girls went home looked
 in the mirror, and felt sorry for her companion.
 —Life.

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	No. 2-B " " " " " " " " " " " "	176
	No. 3-B " " " " " " " " " " " "	213
	No. 4-B " " " " " " " " " " " "	251
	No. 5-B " " " " " " " " " " " "	290
For Hard Coal	No. 1-A Size IDEAL-Arcola with 135 sq. ft. of Radiation	\$163
	No. 2-A " " " " " " " " " " " "	209
	No. 3-A " " " " " " " " " " " "	251
	No. 4-A " " " " " " " " " " " "	285
	No. 5-A " " " " " " " " " " " "	349

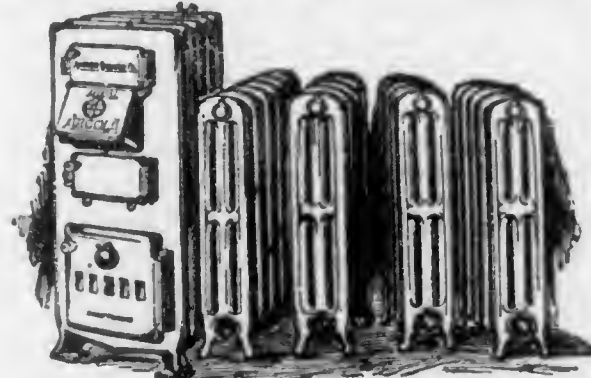
Prices include Expansion Tank and Drain Valve. Prices do not include labor, pipe and fittings used in installation and which are supplied by the local dealer at extra charge. Radiation is of regular 38-in. height 3-column AMERICAN Peerless, in sizes as needed to suit your rooms. Outfits shipped complete, i. e. b. our nearest warehouse, at Boston, Providence, Worcester, Springfield (Mass.), Albany, New York, Philadelphia, Harrisburg, Pittsburgh, Baltimore, Washington, Richmond, Buffalo, Cincinnati, Indianapolis, Birmingham, Detroit, Chicago, Milwaukee, Minneapolis, St. Paul, Des Moines, or St. Louis.

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Catalog showing open views of houses, with the IDEAL-Arcola Boiler in position will be mailed (free). Write today. Sold by all dealers. No exclusive agents.

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A Review of the Year

By FRANK P. WILLETS, Pres.

THE basic price was maintained at nine cents f. o. b. Philadelphia from the time of our last annual meeting until August first, though there was a period when the proper spread between this price and the price of surplus should have been wider. On the latter date the basic price was advanced to 10c in the expectation that market conditions would remain fairly normal at least till after the New Year. But the unexpected happened and we met to-day in the shadow of a radical price decline of 2c per quart just at a season when production costs are generally the highest in the whole year. There are at least three factors which helped to make imperative this unfortunate price decline. (1) The unusually open and moist weather, making unprecedented fall pastures and the consequent greater production. (2) The continued lack of buying power in Europe as shown by the present low rates of exchange, which condition has reduced the exports of condensed milk and other products. (3) Present business stagnation and the collapse of almost all food prices. For instance, sugar, the price of which has fallen from 26c to 10c and less, enters largely into the production of condensed milk and the present stocks of sugared condensed will therefore be necessarily sold at an enormous sacrifice.

Surplus Plan

The prices actually received for milk by individual members during the year have depended on the comparative amount of surplus. The actual results of this plan can be explained by quoting from the paper I read at the recent annual conference of the National Milk Producers' Federation in Chicago. "We feel that, in the long run, the plan has been a good one. Taking it on the average over the year, nobody has lost any money. Many have gained. Some few, who produced only summer milk, that is shipped no milk at all in the fall of 1919, on which a basic quantity could be established, may have been a little behind, but we are not ready to say that they lost anything, because, without the plan, the price of basic milk would not have been as high as it was. We realize that under this plan we have relinquished the trump card, scarcity of production, particularly in the fall months, to aid us in obtaining a higher price. At the same time it must be remembered that it removes the same factor on the part of the dealer who lost his customary surplus argument to beat the price paid producers down during flush supply periods."

We have heard some criticism that the surplus plan was responsible for the present market conditions. One might admit this if it were not that these conditions obtain all over the country regardless of marketing systems employed.

Condensary Situation

Ever since September, the condensary situation has been extremely

unsatisfactory to both producer and manufacturers. Before the war less than 3 per cent of the total milk production of the U. S. was condensed. Last year it was almost six per cent. Of this latter amount perhaps two-fifths was for export. The remainder was consumed in the home markets. The present surplus of condensed milk in domestic markets on our hands by lack of export this past year represents one-half of this amount of one-fifth of the total amount canned. We therefore have in this surplus (one-fifth of the total condensed milk produced), only a little more than 1 per cent of the total production of the U. S. But this one per cent has been enough to demoralize the markets of the whole country, as the condensaries, in order to get large plant volume, have located in the very heart of the great dairy districts in the East, the central and the western parts of our country. It's a very definite case of the "tail wagging the dog."

Because of the relatively small volume of this surplus, the recovery of the industry from this present demoralization should be more rapid, once a permanent peacetime readjustment has been accomplished. Condensaries in Inter-State Milk Producers' Association territory have made temporary arrangements with their shippers during September, October and November more or less in line with such prices elsewhere. We hope and expect thru the recent general adjustment to correct this most unsatisfactory condition. Even had we desired, we could not have held, for any length of time, the dual price level in our territory, for the Philadelphia fluid market was seriously affected by the relatively lower prices at which manufacturers bought their supplies, particularly the fats. Much of this supply was beginning to come in from points outside our own territorial boundaries.

Feed Prices have not been reduced to the farmer thruout our territory as rapidly as to keep pace with the decreasing price of the dairymen's product. This has been largely because (1) local dealers and some farmers stocked feed last summer at peak prices, fearing both poor transportation facilities and higher transportation costs this winter, (2) because manufacturers and mixers have been very reluctant to liquidate at the lower replacement values (tho perhaps they can remember that as prices advanced they insisted on being allowed to always work this rule the other way). There are at least two things we can do to help this situation and they will prove effective (1) feed our home grown grains as far as possible in making up a well balanced ration. Corn at \$1 per bushel is only \$33 per ton at the most for corn and cob meal. Oats at 60c per bushel means \$41.50 per ton ground. Even ground wheat at present country prices is cheaper than some dealers have charged for bran this fall (2) By co-operative buying in carload lots. Local dealers will usually bid on such business much

lower than when the feed is handled by the sack and sold thru the warehouse on long time credits. When they fail to bid or will not meet quotations, our office will always co-operate to put you in touch with brokers or millers. One neighborhood recently had the advantage of a \$12 cut in the price of cottonseed meal at a local warehouse, when our members threatened to buy a carload themselves at a lower price and this self same local saved \$10 per ton by buying a carload of linseed meal direct thru co-operation with this office.

Lower Production Costs

These are the days when it pays to keep accurate records of production costs. We have cow-testing associations in almost every county thru which you can co-operatively hire an accountant to keep an account with your cows. Our "slacker" cows must go and go now if we are to compete with our dairy products in the world's markets. Comparison of prices for milk and for other farm products:

	Dec. 1919	1920	Reduction, %
Corn	\$1.70	\$1.00	41.93
Potatoes, cwt.	2.75	1.75	37
Wheat	2.36	1.85	21.43
Oats	.88	.60	42
Cattle	16.50	12.00	28
Hogs	14.75	11.00	25

The average reduction of all these in price is 32.56 per cent. In the same time the farmers' milk price has been lowered but 11 per cent.

The following are the comparative November prices of 4 per cent milk f. o. b. Philadelphia for the past five years:

	1916	1917	1918	1919	1920
5c	7c	10c	9c	10c	

Labor

It is true, labor costs on our farms continue as high as at any time during the year, and at the same time the supply has been inadequate. On the other hand there is much unemployment in our cities and employers here in Philadelphia are re-employing a better grade of labor at much lower rates. Surely this movement will react to our farmers advantage by another year. Enough able-bodied men must have felt the pangs of hunger by that time to be willing to return to their former places and help produce that which they could eat, relieving our woman and old men and boys, who have, thru these reconstruction days, even to the present time, continued to furnish the bulk of our farm labor within the influence of our great industrial area here in Pennsylvania.

National Activities

During the year just closed, the officers of the Association have taken an active part in promoting the interests of its members in a national way. I have twice represented the Association at the annual meetings of the National Milk Producers' Federation, first in 1919 at the December meeting and then the past October when the date was changed to coincide with the time of the National Dairy Show. During this time I have served as treasurer of that organization. We have taken an active interest in, and rendered, I trust, substantial assistance to the milk producers of New Orleans who have had the misfortune to be the first milk organization prosecuted under the so-called Sherman act, an experience which might just as readily have come to us.



How many cows in your dairy are in A-1 health?

PREVENTION of disease is the first chapter in the gospel of profitable dairying.

Not every cow in your dairy can make a conspicuous production record, but not one of them should be allowed to limp along as "poor milkers" when their yearly yield could be decidedly raised by keeping the organs of production in a top-notch health condition.

This health program does not mean an expensive veterinary service; in most cases an adequate home treatment is simple and easy. The most prevalent cow diseases, such as Retained

Afterbirth, Abortion, Barrenness, Scouring, Bunches and Milk Fever, are directly due to a weakening of the digestive or genital organs. Proper treatment will make them function normally.

KOW-KARE is distinctly a cow medicine; it acts directly on these organs, with prompt and noticeable results. The KOW-KARE treatment is so simple and inexpensive, no wonder it is so widely used.

Feed dealers, general stores and druggists sell KOW-KARE; 70c and \$1.40 packages. Let us send you our free book, "The Home Cow Doctor"

Her Milk Record Is 13,227 Pounds

LAST YEAR this splendid 5-year-old GUERNSEY, besides this notable mark in milk production, had a butterfat total of 653.4 lbs.

Such profitable producers are only found in the dairies where cow health is carefully guarded.

NOTE: The trade-mark name has been changed from KOW-KURE to KOW-KARE—a name more expressive of both the PREVENTIVE and CURATIVE qualities of the remedy. There is not the slightest change in formula or manufacture.



DAIRY ASSOCIATION CO., Lyndonville, Vt.
Manufacturers of KOW-KARE and BAG BALM

Peerless Feed Mill

Double crusher roll, machine-cut plates. Grinds better quality feed with less power, grinds green ear corn, small grains and alfalfa. Also furnished with cast plates. Sizes 1 1/2 to 20 H. P. Write for prices and catalog.

W. D. POWER & CO., 601 W. 33 St., New York City. We are the largest handlers of commission hay in greater New York; if you have hay to dispose of, communicate with them.

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If you have 3 H. P. engine you can run this 14-inch machine successfully. Will pay for itself in one year's use. Will not pulverize blades and tops. Sold on thirty days free trial. Write for price and catalog.

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To all these advantages add low price per pound of actual plant food and you have in mind *The Great American Ammoniate*.

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AGRICULTURAL DEPARTMENT, NEW YORK

HORTICULTURE

PROPAGATING TREES AT HOME

The work of propagating trees and plants is not difficult. Formerly this work was considered among the black arts and the successful nurseryman in the old days was often considered endowed with witchery. For the home orchard on the average farm only a small tract of land is needed. This should be good garden soil, well drained and well fertilized. The few seeds needed for the home nursery may be obtained without difficulty. Peach, cherry and plum pits may be saved from the preserving kettle and apple and pear seeds from cider pomace or other sources. In many cases they may be purchased. The first process is to "stratify" the seeds—that is, place them in moist sand and expose them to the effects of freezing weather. This is done in the late fall or early winter. In the spring the seeds are sown in rows wide enough to allow cultivation. Root-grafting is practiced with many shrubs and propagated by cuttings. These are usually taken in

til set in their permanent places.

Budding is the method employed with peaches and in fact all our tree fruits. It is more simple than root grafting and done in the summer season. The seedlings are left in the nursery rows until near the end of the main growing season, say along in September. A cut in the form of a T, is made in the bark near the base of the seedling. Buds are cut from vigorous twigs on trees of the varieties desired. These buds are cut in the form of a shield which are then inserted in the T prepared, one for each cut. Raffia, grass or thin strips of cloth are bound tightly above and below to hold the bud in place. This can be removed in a few days. The seedling is allowed to grow on until the following spring, when the twig is cut off just above the bud. All other buds are cut off the late fall or early winter. In the so the entire growth of the tree is spring the seeds are sown in rows forced into the one bud.

Grapes, currants and many flower- ing shrubs are propagated by cut- ings. These are usually taken in



Farmers In the Making

allowed to grow thruout the season late fall or winter and should be and dug up at the approach of cold weather. They should be stored in moist sand or better, sawdust from green logs, in a cool cellar or basement. Clons of the current year's growth should be cut at the same time and stored in the same manner. Along in January the graft-union is made. This is done by making a smooth cut at the base end of the cion about an inch long, then near the end a cut is made in the reverse direction so that a thin tongue one-half inch long is made upon the face of the slope. The stock, which is what the seedling is called is prepared in the same way and the two fitted together so that the tongues interlock. Care should be taken that the bark line of stock and cion come together exactly on at least one edge. The union is bound with weak cotton string and placed in storage until planting time. Note that the cuts must be made on the lower or larger end of the cion and upon the upper end of the stock. The root is usually left three or four inches long and the cion may be six or seven. When the graft is placed in the ground, one bud only should be left above the surface. Grafts are set close together in the nursery rows and should be carefully cultivated un-

BEST TOMATOES FOR CANNERY

Out of nine varieties of tomatoes commonly grown for the cannery, Greater Baltimore had the best record in Cumberland County, New Jersey, in a series of tests on five farms. The second best yielding variety was Bonnie Best, including a strain of Bonnie Best seed selected by the cannery factory. Third in yield, was Matchless.

These tests only support the opinion of many growers. The ripening and picking dates show that 45 per cent of the total production of Bonnie Best ripened before September 7, while 34 per cent of the Greater Baltimore ripened before that date, and 26 per cent of the Matchless. Sixty per cent of Bonnie Best ripened during September, 64 per cent of Greater Baltimore, and 57 per cent of Matchless. This shows that Matchless is

January 1, 1921.

good for late planting; 61 per cent of the crop was ripe after September 15.

The average of yields on the five farms was as follows:

Variety.	Av. tons per acre
Greater Baltimore	5.54
Bonnie Best	5.06
Campbell's Bonnie Best	5.41
Matchless	5.05
Simon's Columbia	4.76
Steven's Mixed	4.68
Cumberland Red	4.51
Red Rock	3.78
Stone	4.42

—E. A. Kirkpatrick.

NEW JERSEY APPLE SHOW

New Jersey grows apples under so many varying conditions of soil that at the great fruit show which will be a feature of "Farmers' Week" at Trenton, Jan. 10 to 15, growers will be permitted to compete by geographical districts as well as in the state-wide sweepstakes. The record apple crop of the past season and the range and value of the prizes promise to make the exhibit the finest ever staged by the garden state orchardists.

The fruit show will be held at the Second Regiment Armory in connection with the annual meeting of the State Board of Agriculture and other farm organizations. The State Horticultural Experiment Station will co-operate in putting on the exhibits and all entries must be filed with A. Freeman Mason, of New Brunswick, before January 1.

CHECK DAMAGE BY MICE TO FRUIT TREES

The heavy damage which meadow mice do every winter to young fruit trees may be prevented in a large measure if the farmer or orchardist will go systematically about ridding his orchards of the rodents.

The best preventive is the placing of poisoned bait before the ground is covered with snow. This bait, consisting of poisoned wheat or oatmeal, will kill the mice, but great care needs to be used in placing it, or it will kill valuable birds and poultry.

The best way of distributing the poison is to place a handful of the poisoned grain inside of a tin can, the cut lid of which is partly closed; then put under a board or brush pile in the field or orchard.

The mice ordinarily take shelter in such places and will find the bait even quicker than if it is thrown broadcast. It will likewise be protected from the weather, will retain its strength longer, and will be safe from birds and poultry.

NOTICE TO GRAPE GROWERS

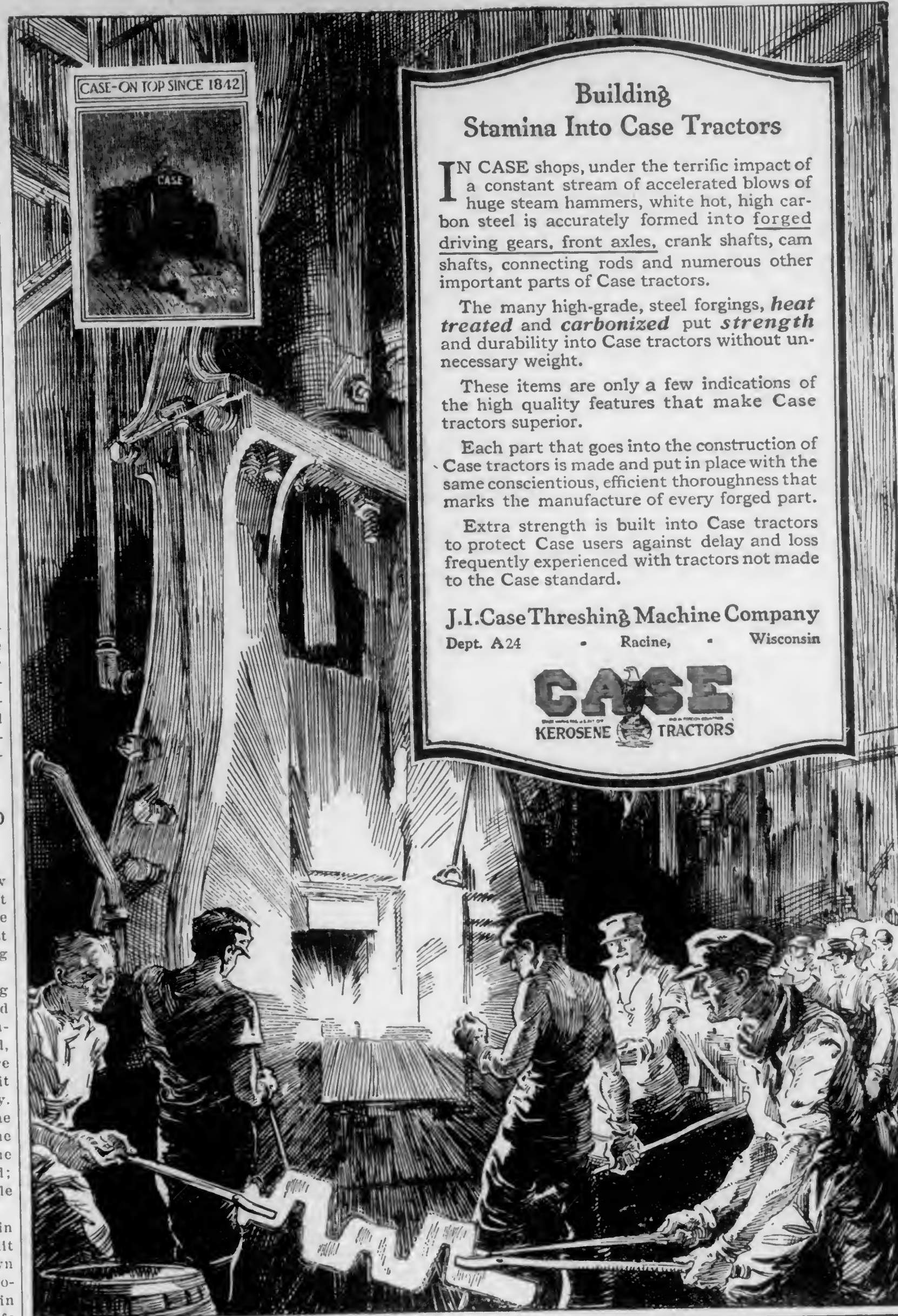
The National Grape Growers' Association will hold its second annual convention at Cleveland, Ohio, January 11, 1921. Headquarters, the Hollenden Hotel.

For further particulars and reservation, communicate with Secretary W. H. Asbury, Unionville, Lake Co., Ohio.

Every bonafide grower of grapes is invited to attend as issues of great importance to the industry must be met.—O. W. Johnson, President.

The thunder of business often sours the milk of human kindness.

A little over half a century ago it took 75 per cent of our population to grow food. Today 25 per cent can do it. Such is efficiency.



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IN CASE shops, under the terrific impact of a constant stream of accelerated blows of huge steam hammers, white hot, high carbon steel is accurately formed into forged driving gears, front axles, crank shafts, cam shafts, connecting rods and numerous other important parts of Case tractors.

The many high-grade, steel forgings, heat treated and carbonized put strength and durability into Case tractors without unnecessary weight.

These items are only a few indications of the high quality features that make Case tractors superior.

Each part that goes into the construction of Case tractors is made and put in place with the same conscientious, efficient thoroughness that marks the manufacture of every forged part.

Extra strength is built into Case tractors to protect Case users against delay and loss frequently experienced with tractors not made to the Case standard.

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You can absolutely depend upon Bell Brand Clover and Grass Seeds. They are the choicest quality, fully tested, and guaranteed as to purity and germination. Every bag is plainly marked. Hardiness and climate adaptability are bred into them—the result of 42 years' experience growing seeds that grow.

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Send your name for catalog and samples—clover and any field seeds you want. Isbell's 1921 Seed Annual describes and gives valuable information on the best seeds that you can buy at any price. Write today.

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Made in all Styles and Sizes. All shears delivered free to your door. Send for circular and prices.

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quickly available, dry and in fine condition for drilling. Write at once for sample, literature, and freight rates.

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Write for 1921 catalogue of fruit trees, vines and plants.

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Did You Ever Grow Such Raspberries?

Syracuse New Red Raspberries are the largest raspberry grown today, superior in quality and very productive. It is hardy, northern grown and an abundant producer. Color beautiful red.

The illustration has been greatly reduced from a photograph of Syracuse New Red Raspberries grown on no finer bushes than you receive when you order from Green's Nursery Co.

Other new fruits of rare quality are: Cao, a new red grape, the Rochester hardy, early yellow freestone peach and the new honeysweet black-cap raspberry.

Everything for the Garden and Orchard
Our trees are True To Name. Best varieties of apple, pear, peach, cherry, nut and shade trees; strawberry plants, gooseberry, blackberry, raspberry and currant bushes, shrubs, vines, roses and ornamentals.

We have had over 42 years' experience growing superior trees and plants. Buy direct and save money. Send for our free catalog today.

GREEN'S NURSEY CO., Box 33, Rochester, N. Y.



Polly, Put the Kettle On

Hot Water as a Remedy

As a simple household remedy I know of nothing so quickly and easily obtained, and so efficacious in results, as hot water. At least three times in the past 20 years I have heard physicians express appreciation of the help rendered them in treating emergency cases by farm women by whom it had been applied while awaiting the advent of the doctor.

On one occasion I was awakened at midnight to find a member of the family suffering agonizing abdominal pain, which was the more alarming to us from the fact that he was rarely ill and never made any fuss over an ailment. We realized at once that there was some acute intestinal trouble, and that serious, if not fatal, results would ensue unless relief was speedily given. So while a neighbor hastened for a doctor (telephones were then unknown in rural communities), we administered the usual household remedies, all of which were instantly rejected by the stomach, thus increasing our alarm. Fortunately I recalled treatment I had once seen given under physicians' orders to a woman threatened with typhoid fever, in which case severe intestinal pain had succumbed to hot applications, thick towels being wrung out of hot water to which had been added a few drops of turpentine, and applied to the region of pain, the treatment being continued for a half hour, and then hot water, with the turpentine omitted, being substituted for another half-hour, and "stools" applied at longer intervals. As family custom older than the writer had decreed that water must be put to heat at once in time of such alarm, the kettle was boiling by the time soda, peppermint, etc., had proved futile. These external applications were resorted to with great relief to the sufferer till the arrival of the doctor two hours later. And the first thing that the doctor ordered was hot applications. On learning that his order had been anticipated, and the nature of the application, he complimented us on "knowing how to use our heads."

Later a member of the family had a croupy child. The first attack, shortly after midnight, found the young parents with no knowledge of mode of procedure and loathe to call a neighbor. Fortunately, the doctor was but a few houses distant and was soon at hand. On calling for hot water he expressed surprise that it was instantly forthcoming, and was told that the young mother always left a large kettle of water on the all-night coal fire in the living-room. My mother during my absence slipped and fell down several steps and injured her knee. I found it badly swollen. While waiting for the doctor, who was obtained after a wait of several hours, we applied hot compresses. On his arrival the doctor said he could not determine the nature of the injury till the swelling subsided and that we were doing all that could be done to bring about such a result. On a later call he

found a dislocation of the kneecap. (Editor's Note.—The X-ray photos nowadays determine at once any fracture or dislocations; also abscesses and tubercular lesions).

The use of hot water bottles allows hot application with less annoyance and discomfort to patient than the old-time compress or "stools," and when possible to obtain results as effluently and the like ailments the frantically I use it. In pneumonia, flu, is necessary to furnish dry heat.

I have found the hot-water bottle placed in the bed near the feet of the sufferer excellent in cases of insomnia of an aged person, and have seen good results from its use at the feet of an epileptic whose falling attacks were followed by sleepless nights.

In cases of infantile convulsions,



Doily Dish Mats With Tape or Ribbon

however, the bottle application is out of the question, and the hot bath or hot pack must be resorted to. As this is one of the most common and at the same time most terrifying conditions that arises to demand prompt home treatment, I will close by giving an instance in which I had my first and, I am glad to say, only opportunity to witness treatment and results.

The mother was a nervous creature who could do nothing but wring her hands and cry when her two-year-old boy was thrown into convulsions by being fed on banana. The older children ran for Mrs. C. and myself. The former caught up a large dishpan (foot tub lacking), filled it with hot water which was fortunately on the stove, and had the baby in a hot bath in a jiffy. My part in what looked to me to threaten a tragedy was to telephone for the doctor—always hard to locate at 10 A. M. when out on wide country practice, and I found my job no sinecure. Finally we caught him and he got on the case just as the child, having suffered several relapses, had settled into unconsciousness. He disdained the dishpan, and ordered

the wash boiler to be half filled with hot water, and blankets brought. Then the big kitchen table was cleared and for three hours Mrs. C. and I nearly boiled our hands in wringing out steaming blankets while the doctor, coat discarded and sleeves rolled up, kept the unconscious baby in a hot pack on that table. At the end of that time the baby passed into natural sleep.

I have since learned that bananas are likely to affect young children thus.

While to be "kept in hot water" sounds prejudicial to domestic peace and happiness, its practical application may save much trouble and even life.—Mrs. Julia McS. Miller, Baltimore Co., Md.

DON'T CHANGE YOUR SPOTS

In our town there is a young girl who was noted for her friendliness and pep. She married a conservative, dignified bachelor who was the only son of a properly assorted family consisting of the father, mother, grandmother and two maiden aunts. All of the family were of the aloof, I-am-not-of-your-sphere type, as dignified, proper and precise as you could imagine.

The little bride was the exact antithesis of her newly acquired in-laws. Everybody supposed, in a few years, Jane would be a perfect rep-

resentation of the type who makes many friends, but had she submerged her personality with that of her newly acquired relations I fear her new personality would have lost many friends.

So, let us be like the leopard, and not try to change our spots! Let's get away from being "copy cats." One of the greatest charms anyone can possess is just being natural—absolutely, wholly and completely—yourself!—Helen Gregg Green.

HOG-KILLING TIME RECIPES

Hog-killing time means that the farmer must consider ways of preserving pork, not only to keep it in good condition but to make it tasty as well. The methods following have been gathered by the Department of Home Economics at the University of Wisconsin.

Dry Curing

For every 100 lbs. of pork a mixture should be made consisting of 2 lbs. New Orleans sugar; 8 to 10 lbs. salt; 2 oz. saltpeter; 2 oz. pepper and 2 oz. red pepper, or 4 oz. black pepper.

The thoroly cooled hams, bacon and shoulders should be rubbed with one-half the dry mixture, left in a cool dry place for two weeks, and then rubbed with the remainder of the sugar and salt mixture. The meat should then be allowed to stay in a cool dry place for six weeks. Care must be taken to force the sugar and salt mixture into the hock ends of the bones and into the joints. At the end of the second period the meat should be smoked.

Pork Sausage Making

To every 3 lbs. fresh pork allow 1 lb. fat. Grind the meat and the fat thru a meat chopper. Weigh the meat, spread it out in a thin layer, and season with the following mixture, allowing to every 10 lbs. meat 2½ oz. fine salt, 1½ oz. black pepper and 1½ oz. ground sage (or leaf sage ground fine).

The seasoning should be sprinkled over the meat, and the two mixed together and run thru a meat chopper a second time.

Bulk sausage may be packed in a stone or glass jar, and the air kept out by a thin coating of melted lard poured over the top.

Head Cheese

Boil 25 lbs. pork taken from the head, heart and tongue and trimmings. When the meat separates from the bones, cool the mixture and separate the bones from the meat. Cut the meat into ½ or 1-inch cubes and add this seasoning: ½ lb. pepper, ½ lb. salt, ½ oz. allspice, ½ oz. cloves, ½ oz. caraway, 2 qts. broth in which the meat was boiled.

Mix thoroly together. The cheese may be put into a clean hog paunch, or it may be put into a two-inch pan to cool.

Philadelphia Scrapple

Meat cooked as for head cheese is used. To 25 lbs. meat use ½ lb. pepper and ½ lb. salt. The bones are removed and the meat turned into the liquor in which it was cooked. It is then heated to the boiling point and corn meal added slowly with constant stirring until the mixture is as thick as cornmeal mush. It should be stirred and boiled for 15 minutes to distribute the fibers of meat thruout the mass, and then cook it very slowly an additional hour. Pour it into shallow pans 2 inches in depth, cool and keep in a cool place. It is sliced

thin and fried as needed.

Soup Meats for Canning.

Place 25 lbs. ribs, joints, marrow bones cracked in a thin cloth sack in a large kettle holding 5 gallons cold water. Simmer, do not boil, for at least six hours. Skim off the fat. Remove the sack of bones and add boiling water to make 5 gallons. Pack in sterile hot glass jars, partially seal and sterilize for 1½ hours. Seal thoroly and keep in a cool place.

COOKING HINTS

For the very best coffee reheat the beans in the oven, adding a little butter and stirring often until well heated thru. Prepare only enough for one meal and grind when just ready to use.

Any left-over bits of canned or preserved fruit, jam or jelly can be used in pudding sauce, giving it an unusual flavor. Or it may be used in any kind of blanc mange, gelatin or tapioca desserts, giving them not only a fine appearance but an improved flavor.

When a gelatin dessert is wanted quickly, dissolve the gelatin in only half the usual amount of hot water, using for the remainder cold water. It cools in half the time and is just as good.

When whipping cream, add enough honey to sweeten it, and whip as usual. It whips more easily, retains its stiffness better and has a delicate flavor very unlike that when sugar is used.

When putting the vegetables for soup thru the food chopper, add two slices of stale bread to soup enough for six people. When ground with the vegetables it absorbs their juices so none is lost, and it thickens the soup slightly.

When one has reason to think that yeast cakes are too old to have proper raising power, they can be tested in this way: Place one in a cup two-thirds full of water and add a dessertspoon of sugar. If good it will soon rise to the top of the water surrounded by a mass of bubbles, which shows it is working. If it does not do this, the yeast is too old to use.

Save the rich syrup after the pickled pears and peaches have been used. Baste the roast with a little of it and see what a delicious flavor it imparts to the meat. If the syrup is quite sweet, use it instead of molasses in cake or gingerbread, and the rest of it can be used in mince pies.

If left-over cereal has cold water poured over it before being set away it will never have a hard skin form on top. The water can be easily drained off before the cereal is used again.—Mrs. H. M. Woodward.



PENNSYLVANIA FARMER PATTERNS
Give figures and letters of each pattern exactly as printed at beginning of each description or we will not be responsible for correct fitting of orders. Give bust measure when ordering waist patterns, waist measure for skirt, and age for children's patterns. Address: Pennsylvania Farmer, 261 S. Third Street, Philadelphia, Pa.

1974.—Child's Outdoor Set.—Consisting of Leggings and Coat. The leggings extend to the waistline. The pattern is cut in 4 sizes: 2, 3, 4 and 5 years. It requires 3½ yards of 44-inch material for a 4-year size. Pattern, 10 cents.

3051.—Coat for 6 to 14 Years.—This is a good spring model for cheviot and tweed mixtures. The fronts may be turned back in low outline, or closed to the neck edge, with the collar rolled high. The pattern is cut in 5 sizes: 6, 8, 10, 12 and 14 years. Size 12 will require 4½ yards of 44-inch material. Pattern, 10 cents.



3102.—Coat for Wee Maids.—The pattern is cut in 4 sizes: 4, 6, 8 and 10 years. Developed in brown wool velours with facings of velvet in a matched shade, this makes a natty top coat for little girls. The body and sleeve are cut in one. A six-year size will require 8½ yards of 44-inch material. Pattern, 10 cents.

1859.—Attractive Cap Styles.—The college girl and the school girl both find this style of head covering attractive, and the fashions here shown are so easy to develop that even the little school girl who knows how to ply her needle can make for herself a smart cap for school. Poplin, faille, taffeta are nice for spring caps. Pattern comes cut in 3 sizes: 3 to 8 years (children's), 10 to 14 years (girls'), and 16 to 20 years (ladies'). Girls' size requires ¾ yard of 27-inch material for Cap No. 1 and 1 yard for No. 2 with ¾ yard of canvas and ½ yard of buckram for interlining. Pattern, 10 cents.

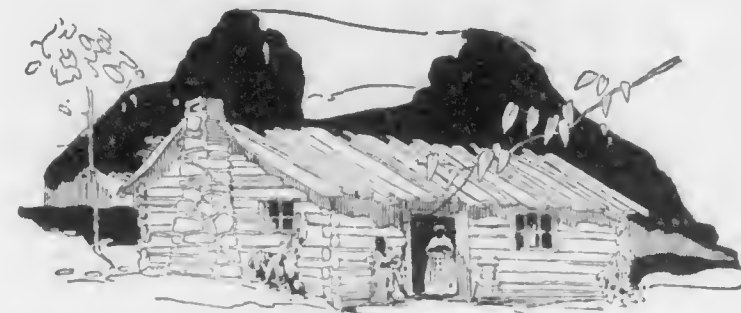
3095.—Cape and Muff Set.—These will feel good many a raw day in March and April. The pattern comprises a muff cut in one size, and a cape cut in 3 sizes: Small, 32-34; medium, 36-38; and Large, 40-42 inches bust measure. Fur, plush, velvet, corduroy, satin silk and broadcloth are good materials for the cape and the muff. Fur and velvet, or satin may be combined. The collar is convertible. It may be rolled high or low. To make the cape in a medium size will require 2½ yards of 44-inch material. The muff requires ½ yard of 30-inch material for the outside and 1½ yard for all inside sections and stays. Pattern, 10 cents.



1141.—Carriage Robe and Moccasins for Baby.—The robe is so cut and made as to afford complete covering for the little one. This model, made of blanket cloth in a pretty nursery design or of white elderdown lined with soft batiste or silk, would prove very satisfactory and warm. The pattern is in one size only. It requires 1 yard of 30-inch material for one pair of moccasins, and 2½ yards of 36-inch material for the robe. Pattern, 10 cents.



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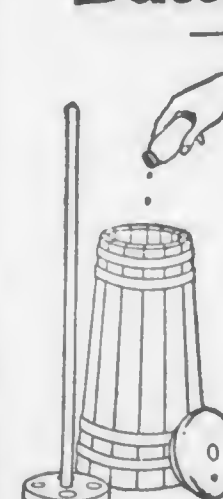


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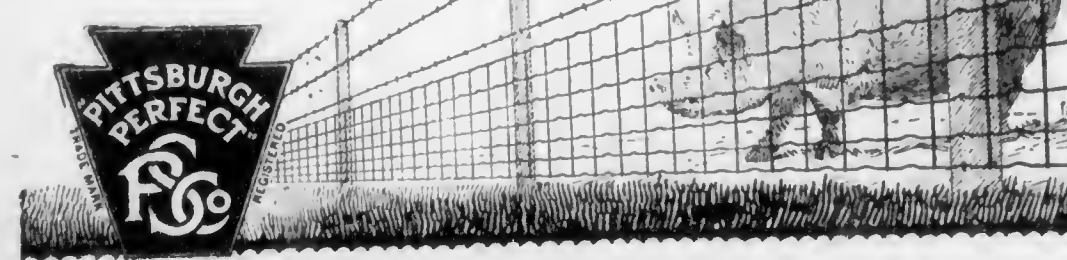
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REPORTS OF GRANGES

(Continued From Page 2.)

It is ridiculous for a State to license the selling of a thing that the Federal Constitution and its enabling act forbids. We must again insist with greater vehemence than ever that personal and corporate property shall pay its share of the expense of government and the appropriations for the public need.

We must insist on the right of experimentation in a system of schools that will be suitable to country conditions. Our little folks should go to school in the summer time and stay home in the winter time. Our teachers should be employed for at least eleven months, so that they will have a real occupation like other people. We can close half our schools in the fall, and use the extra teachers to teach agriculture, domestic science, music and manual training—all of which are essential to proper education for the conditions we now live under. The Legislative Committee will again more fully outline the policy we adopted for discussion at our last state meeting.

The Grange Mutual Casualty Company will show the best year it has ever had. We wish again to emphasize the danger of carelessness in this matter on the part of our mem-

tionized their business in the same way. The milk organizations were nearly all in this part of the country started in the Grange, though the organization itself was made outside. This is as it should be, but the Grange should not stop with milk. We should encourage in the same way the organization of a selling potato organization and a fruit selling organization. These organizations have no reference to communities, but are distinctly commodity organizations, but the Grange has the machinery to establish the units needed and to furnish the meeting places when meetings are necessary. We have a Potato Association in this state, and if it would undertake the founding of a state-wide selling agency, I feel sure the Grange would give it royal support in the project. We have a Horticultural Society, and possibly that would be the most fitting nucleus for the establishment of a fruit-selling association that would prevent the loss of the crop in many cases as was the case this year. (Continued Next Week.)

VIEWS ON TAXATION

Editor of The Pennsylvania Farmer: According to your news columns, the National Grange has given forth



Paul and Verna Clouser, Prize Winners at Allentown, Pa. Fair

bers. The time will come when every some views on the subject of taxation. It recommends what is practically a continuance of our present that only those communities are real-ly awake to the situation in which who improve, who save, or who increase the sum total of wealth, or, who are fortunate enough to have wealth thrust upon them. After uttering many paragraphs of absurdities along these lines, it concludes with the only two paragraphs that are based on reason or common sense.

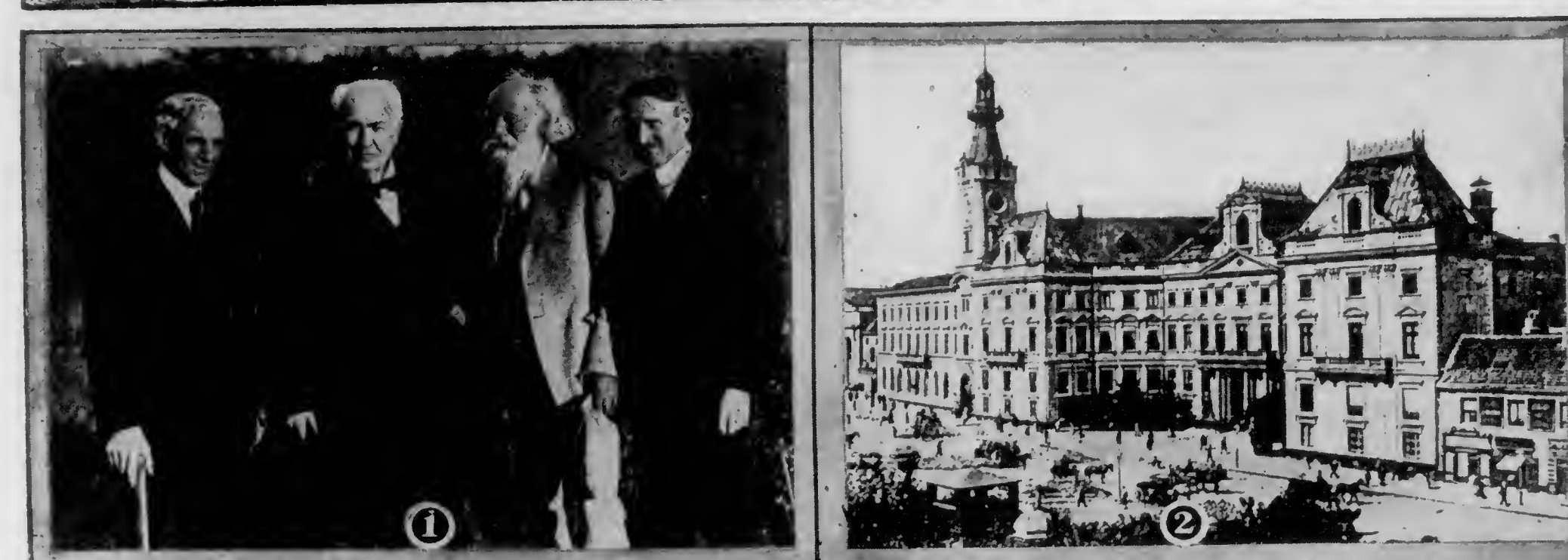
These two paragraphs declare that "All taxes should be levied to encourage home owning and to discourage speculation and tenancy, so far as public policy will permit." The Grange opposes a general sales tax.

Commodity Organization

Why did the members of the Grange, after advocating taxation of all the elements and interests necessary to the encouragement of home owning, and, the continuance of taxes far more unfair and immoral than the sale tax, then ask for taxes that would encourage home owning? I can only find one explanation for such an inconsistent, contradictory and absurd course. I "have a hunch" that the leading spirits of the Grange are wily politicians, that they know the masses of Grange members have little or no economic knowledge, and they (the leaders) who favor the present system of robbing industry and rewarding idleness, see safety in so muddling the situation, that the masses will become disgusted and drop the subject.—Oliver McKnight.

The citrus growers have revolu-

PASSING EVENTS IN PICTURES



(Photo, Copyright by Underwood & Underwood)

- 1—Four of America's Most Notable Men—From Right to Left: Harvey S. Firestone, John Burroughs, Naturalist; Thomas A. Edison, Electrical Wizard, and Henry Ford.
- 2—Red Headquarters at Grajeto.
- 3—This Ouija "Went" Wrong; It Predicted the Election of Governor Cox, and is the Official Board of the Marine Corps, Boston, Mass.

- 4—New Cooler in Use at Greenwich Point, Philadelphia.
- 5—Indian Pageant by Hunter College Girls.
- 6—First Chinaman to be Called for Jury Duty in America.

- 7—Master Robert Galt, Who is a Great Pet at Buena Vista Springs.
- 8—Leaders in the Democratic Waist Measuring Contest. Mrs. Ada Jacobs Was the Largest Contributor and Miss Irene Mulqueen the Smallest.



The Voice of the Pack

by Edison Marshall

CHAPTER V.

DAN could see only Snowbird's outline at first, just her shadow against the moonlit hillside. His glasses were none to good at long range. And possibly, when she came within range, the first thing that he noticed about her was her stride. The girls he knew didn't walk in quite that free, strong way. She took almost a man-size step; and yet it was curious that she did not seem ungrateful. Dan had a distinct impression that she was floating down to him on the moonlight. She seemed to come with such unutterable smoothness. And then he heard her call lightly thru the darkness.

The sound gave him a distinct sense of surprise. Some way, he had not associated a voice like this with a mountain girl; he had supposed that there would be so many harshening influences in this place. Yet the tone was as clear and full as a trained singer's. It was not a high voice; and yet it seemed simply brimming, as a cup brims with wine, with the rapture of life. It was a self-confident voice too, wholly unaffected and sincere, and wholly without embarrassment.

Then she came close, and Dan saw the moonlight on her face. And so it came about, whether in dreams or wakefulness, he could see nothing else for many hours to come.

Beauty, after all, is wholly a matter of the nearest possible approach to the physical perfection that many centuries of human faces have established as a standard. This perfection in this case does not mean some ideal that has been imaged by a poet, but just the nearest approach to the perfect physical body that nature intended, and which is the flawless example of the type that composes the race. Thus a typical feature is the most beautiful and by this reasoning a composite picture of all the young girl faces in the Anglo-Saxon nations would be the most beautiful face that any painter could conceive. It follows that health is above all the most essential quality to beauty, because disease, from the nature of things, means thwarted growth that could not possibly reach the typical of the race.

The girl who stood in the moonlight had health. She was simply vibrant with health. It brought a light to her eyes, and a color to her cheeks, and life and shimmer to her moonlit hair. It brought curves to her body, and strength and firmness to her limbs, and the grace of a deer to her carriage. Whether she had regular features or not Dan would have been unable to state. He didn't even notice. They weren't important when health was present. Yet there was nothing of the coarse or bold or voluptuous about her. She was just a slender girl, perhaps twenty years of age, and weighing even less than the figure occasionally to be read in the health magazines for girls

of her height. And she was fresh and cool beyond all words to tell.

And Dan had no delusions above her attitude toward him. For a long instant she turned her keen, young eyes to his white, thin face; and at once it became abundantly evident that beyond a few girlish speculations she felt no interest in him. After a single moment of rather strained, polite conversation with Dan—just enough to satisfy her idea of the conventions—she began a thrilling tale to her father. And she was still telling it when they reached the house.

Dan held a chair for her in front of the fireplace, and she took it with entire naturalness. He was careful to put it where the firelight was at its height. He wanted to see its effect on the flushed cheeks, the soft dark hair. And then, standing in the shadows, he simply watched her. With the eye of an artist he delighted in her gestures, her rippling enthusiasm, her utter, irrepressible girlishness that all of time had not years enough to kill.

He decided that she had gray eyes. Gray eyes seemed to be characteristic of the mountain people. Sometimes, when the shadows fell across them, they looked very dark, as if the pines had been reflected in them all day and the image had not yet faded out. But in an instant the shadow flicked away and left only light—light that went into him and did all manner of things to his spirit.

Bill stood watching her, his hands deep in his pockets, evidently a companion of the best. Her father gazed at her with amused tolerance. And Dan—he didn't know in just what way he did look at her. And he didn't have time to decide. In less than fifteen minutes, and wholly without warning she sprang up from her chair and started toward the door.

"Good Lord!" Dan breathed. "If you make such sudden motions as that I'll have heart failure. Where are you going now?"

"Back to my watch," she answered, her tone wholly lacking the personal note which men have learned to expect in the voices of women. And an instant later the three of them saw her retreating shadow as she vanished among the pines.

Dan had to be helped to bed. The long ride had been too hard on his shattered lungs; and nerves and body collapsed an instant after the door was closed behind the departing girl. He laughed weakly and begged her pardon; and the two men were really very gentle. They told him it was their own fault for permitting him to overdo. Lennox himself blew out the candle in the big, cold bedroom.

Dan saw the door close behind him, and he had an instant's glimpse of the long sweep of the moonlit ridge that stretched beneath the window. Then, all at once, seemingly without warning, it simply blinked out. Not until the next morning did he really know why. Insomnia was an old acquaintance of Dan's, and he had expected to have some trouble in getting to sleep. His only real trouble was

waking up again when Lennox called him to breakfast. He couldn't believe that the light at his window shade was really that of morning.

"Good Heavens!" his host exploded. "You sleep the sleep of the just." Dan was about to tell him that on the contrary he was a very nervous sleeper, but he thought better of it. Something had surely happened to his insomnia. The next instant he even forgot to wonder about it in the realization that his tired body had been wonderfully refreshed. He had no dread now of the long tramp up the ridge that his host had planned.

But first came target practice. In Dan's baggage he had a certain very plain but serviceable sporting rifle of about thirty-four caliber—a gun that the information department of the large sporting-goods store in Gettysburg had recommended for his purpose. Except for the few moments in the store, Dan had never held a rifle in his hands.

Of course the actual aiming of a rifle is an extremely simple proposition. A man with fair use of his hands and eyes can pick it up in less time than it takes to tell it. The fine art of marksmanship consists partly in the finer sighting—the instinctive realization of just what fraction of the front sight should be visible thru the rear. But most of all it depends on the control that the nerves have over the muscles. Some men are born rifle shots; and on others it is quite impossible to thrust any skill whatever.

The nerve impulses and the muscular reflexes must be exquisitely tuned, so that the finger presses back on the trigger the identical instant that the mark is seen on the line of the sights. One quarter of a second's delay will usually disturb the aim. There must be no muscular jerk as the trigger is pressed. Shooting was never a sport for blasted nerves. And usually such attributes as the ability to judge distances, the speed and direction of a fleeing object, and the velocity of the wind can only be learned by tireless practice.

When Dan first took the rifle in his hands, Lennox was rather amazed at the ease and naturalness with which he held it. It seemed to come naturally to his shoulder. Lennox scarcely had to tell him how to rest the butt and to drop his chin as he aimed. He began to look rather puzzled. Dan seemed to know all these things by instinct. The first shot, Dan hit the trunk of a five-foot pine at thirty paces.

"But I couldn't very well have missed it!" he replied to Lennox's cheer. "You see, I aimed at the middle—but I just grazed the edge."

The second shot was not so good, missing the tree altogether. And it was a singular thing that he aimed longer and tried harder on this shot than on the first. The third time he tried still harder, and made by far the worst shot of all.

"What's the matter?" he demanded. "I'm getting worse all the time."

Lennox didn't know for sure. But he made a long guess. "It might be beginner's luck," he said, "but I'm inclined to think you're trying too hard. Take it easier—depend more on your instincts. Some marksmen are born good shots and cook themselves trying to follow rules. It might be, by the longest chance, that you're one of them—at least it won't hurt to try."

Dan's reply was to lift the rifle lightly to his shoulder, glance quickly along the trigger, and fire. The bullet struck within one inch of the pine.

For a long time Lennox gazed at him in open-mouthed astonishment. "My stars, boy!" he cried at last. "Was I mistaken in thinking you were a born tenderfoot—after all? Can it be that a little of your old grandfather's skill has been passed down to you? But you can't do it again."

But Dan did do it again. If anything, the bullet was a little nearer the center. And then he aimed at a more distant tree.

But the hammer snapped down effectively on the breech. He turned up with a look of question.

"Your gun only holds five shots," Lennox explained. Reloading, Dan tried a more difficult target—a trunk almost one hundred yards distant. Of course it would have been only child's play to an experienced hunter; but to a tenderfoot it was the difficult mark indeed. Twice out of four shots Dan hit the tree trunk, and one of his two hits was practically a bull's eye. His two misses were the result of the same mistake he had made before—attempts to fold his aim too long.

The shots rang far thru the quiet woods, long-drawn from the echoes that came rocking back from the hills. In contrast with the deep silence that is really an eternal part of the mountains the sound seemed preternaturally loud. All over the great sweep of canyon, the wild creatures heard and were startled. One could easily imagine the Columbian deer, gone to their buckbrush to sleep, springing up and lifting pointing ears. There is no more graceful action in the whole animal world than this first, startled spring of a frightened buck. Then old Wolf, feeding in the berry bushes, heard the sound, too. Wolf has considerably more understanding than most of the wild inhabitants of the forest, and maybe that is why he left his banquet and started falling all over his awkward self in descending the hill. It might be that Lennox would want to procure his guest a sample of bear steak; and Wolf didn't care to be around to suggest such a thing. At least, that would be his train of thought according to those naturalists who insist on ascribing human intelligence to all the forest creatures. But it is true that Wolf had learned to recognize a rifle shot, and he feared it worse than anything on earth.

Far away on the ridge top, a pair of wolves sat together with no more evidence of life than two shadows. One of the most effective accomplishments a wolf possesses is its ability to freeze into a motionless thing, so the sharpest eye can scarcely detect him in the thickets. It is an advantage in hunting, and it is an even greater advantage when being hunted. Yet at the same second they sprang up, simply seemed to spin in the dead pine needles, and brought up with sharp noses pointed and ears erect, facing the valley.

A human being likely would have wondered at their action. It is doubtful that human ears could have detected that faint tremor in the air which was all that was left of the rifle report. But of course this is a question that would be extremely difficult to prove; for as a rule the senses of the larger forest creatures, with the great exception of scent, are not as perfectly developed as those of a human being. A wolf can see better than a man in the darkness, but not nearly as far in the daylight. But the wolves knew this sound. Too many times they had seen their pack-fellows die in the snow when such a report as this one, only intensified a thousand times, cracked at them thru

the winter air. No animal in all the forest has been as relentlessly hunted as the wolves, and they have learned their lessons. For longer years than most men would care to attempt to count, men have waged a ceaseless war upon them. And they have learned that their safety lies in flight.

Very quietly, and quite without panic, the wolves turned and headed farther into the forests. Possibly no other animal would have been frightened at such a distance. And it is certainly true that in the deep, winter snows not even the wolves would have heeded the sound. The snows bring famine; and when famine comes to keep its sentry-duty over the land, all the other forest laws are immediately forgotten or ignored. The pack forgets all its knowledge of the deadliness of men in the starving times.

The grouse heard the sound, and, silly creatures that they are, even they raised their heads for a single instant from their food. The felines—the great, tawny mountain lions and their smaller cousins, the lynx all devoted at least an instant of concentrated attention to it. A raccoon, sleeping in a pine, opened its eyes, and a lone bull elk, such as some people think is beyond all other things the monarch of the forest, rubbed his neck against a tree trunk and wondered.

But yet there remained two of the larger forest creatures that did not heed at all. One was Urson, the porcupine, whose stupidity is beyond all measuring. He was too slow and patient and dull to give attention to a rifle bullet. And the other was Graycoat the coyote, gray and strange and foam-lipped, on the hillside. Graycoat could hear nothing but strange whinnings and voices that rang ever in his ears. All other sounds were obscured. The reason was extremely simple. In the dog days a certain malady sometimes comes to the wild creatures, and it is dreaded worse than drought or cold or any of the manifold terrors of their lives. No one knows what name they have for this sickness. Human beings call it hydrophobia. And the coyotes are particularly susceptible to it.

Ordinarily the name of coyote is, among the beasts, a synonym for cowardice as well as a certain kind of detested cunning. All the cowardice of a mountain lion and a wolf and a lynx put together doesn't equal the amount the Graycoat carried in the end of his tail. That doesn't mean timidity. Timidity is a trait of the deer, a gift of nature for self-preservation, and no one holds it against them. In fact, it makes them rather appealing. Cowardice is a lack of moral courage to remain and fight when nature has afforded the necessary weapons to fight with. It is sort of a betrayal of nature—a misuse of powers. No one calls a rabbit a coward because it runs away. A warlike rabbit is something that no man has ever seen since the beginning of the world, and probably never will. Nature hasn't given the little animal any weapons.

But this is not true of the wolf or cougar. A wolf has ninety pounds of lightning-quick muscles, and teeth that are nothing but a set of well-sharpened and perfectly arranged daggers. A cougar not only has fangs but talons that can rend flesh more terribly than the cogs of a machine, and strength to make the air hum under his paw as he strikes it down. And so it is an extremely disappointing thing to see either of

these animals flee in terror from an Alredale not half their size—a sight that most mountain men see rather often. The fact that they act with greater courage in the famine times, and that either of them will fight to the very death when brought to bay, are not extenuating circumstances to their cowardice. A mouse will bite the hand that picks it up if it has no other choice.

A coyote is, at least in a measure equipped for fighting. He is smaller than a wolf, and his fangs are almost as terrible. Yet a herd of determined sheep, turning to face him, puts him in a panic. The smallest dog simply petrifies him with terror. And a rifle report—he has been known to put a large part of a county between himself and the source of the sound in the shortest possible time. If a mountain man feels like fighting, he simply calls another a coyote. It is more effective than impugning the virtue of his female ancestors. To be called a coyote means to be termed the lowest, most despised creature of which the imagination can conceive.

And besides being a perfect, unprincipled coward, he is utterly without pride. And that is saying a great deal. Most large animals have more pride than they have intelligence, particularly the bear and the moose. A mature bear, dying before his foes, will often refrain from howling even in the greatest agony. He is simply too proud. A moose greatly dislikes to appear to run away in the presence of enemies. He will walk with the dignity of a bishop until he thinks the brush has obscured him; and then he will simply fly! And there was a dog once, long ago, which, meeting on the highways a dog that was much larger and that could not possibly be mastered, would simply turn away his eyes and pretend not to see him.

A coyote is wholly without this virtue, as well as most of the other virtues of the animal world—because if one started to condemn all the carion-eating animals of the forest he would soon have precious few of them left—but he also eats old shoes off rubbish pile. Unlike the wolf, he does not even find his courage in the famine times. He has cunning, but cunning is not greatly beloved in men or beasts. Most folk prefer a kindly, blundering awkwardness, a simplicity of heart and spirit, such as are to be found in Wolf the bear.

But Graycoat has one tendency that makes all the other forest creatures regard him with consternation; he is extremely liable to madness. Along in dog days he is seen suddenly to begin to rush thru the thickets, barking and howling and snapping at invisible enemies, with foam dropping from his terrible lips. His eyes grow yellow and strange. And this is the time that even the bull elk turns off his trail. No one cares to meet Graycoat when the hydrophobia is upon him. At such time all his cunning and his terror are quite forgotten in his agony, and he is likely to make an unprovoked charge on Wolf himself.

Now Graycoat came walking stiff-legged thru the thickets. And the forest creatures, from the smallest to the great, forgot the far-off peal of the rifle bullets to get out of his way.

(Continued Next Week)

A RURAL LIBRARY ON WHEELS

If you can't go to the public library, the public library should come to you. That is the opinion of the

American Library Association. At present, only forty per cent of the people in this country are enjoying adequate public library privileges. Travelling motor-truck libraries are one means of reaching those who live in the remote regions. It is for the sake of the sixty per cent that the American Library Association has adopted an enlarged program of service and pledged itself to raise two million dollars to make it come true.

The Universal Brotherhood

Bolshevik Leader: Is there anybody in this mob who knows how to run a printing press?

"I do."

"Good. You're appointed Secretary of the Treasury."—Life.

Give Her Room

Elderly Aunt (to little boy, sliding down the banister): Here, Johnny! I wouldn't do that.

Johnny: 'Course you wouldn't. How would it look—an old lady like you?—Life.

IN SCHOOL-DAYS

Still sits the school-house by the road,
A ragged beggar sunning;
Around it still the sumachs grow,
And blackberry vines are running.

Within, the master's desk is seen,
Deep scarred by raps official;
The warping floor, the battered seats,
The jack-knife's carved initial;

The charcoal frescos on its wall;
Its door's worn sill, betraying

A Story for Children

The Travel of a Penny

By L. M. K.

WHAT a dark smelly pocket this is! I wish I could get out. This man has no right to have me anyway, for he took me out of the collection plate as it was passed to him in church. I was feeling so happy, for a little girl had carried me to church and I had heard her tell her grandmother that I was going to help feed the French orphans. There I was lying on the plate shining and happy. I was shiny because I was new. It was only a few days ago that I was taken from the bank for the first time by a kind man, the father of the little girl who gave me into the collection. However, just when I was so happy, this miserable old tramp picked me off the plate. He must have thought I was gold for he would never have taken just a copper penny intentionally.

How can I get out? I'm here in this place so long. I'm beginning to smell of stale tobacco and the shine is getting dull from rubbing against old buttons, an old pocket knife, some rusty nails and worst of all, an ancient corn-cob pipe. I feel faint from the odor. Why doesn't he spend me for something. Maybe I'm hidden. I shall try and roll another place so that he can feel me when he puts his hand into his pocket.

I wonder where we are going so fast. A policeman must be chasing us, for I hear someone calling "Stop thief!" My owner must have stolen something else. Oh! I hope the policeman catches him, for then maybe I would get out of this horrid place, where I am not doing a speck of good. The pursued person suddenly stops going.

The feet that, creeping slow to school,
Went storming out to playing!

Long years ago a winter sun
Shone over it at setting;
Lit up its western window-panes,
And low eaves' icy fretting.

It touched the tangled golden curls,
And brown eyes full of grieving,
Of one who still her steps delayed
When all the school were leaving.

For near her stood the little boy
Her childish favor singled;
His cap pulled low upon a face
Where pride and shame were mingled.

Pushing with restless feet the snow
To right and left, he lingered;—
As restlessly her tiny hands
The blue-checked apron fingered.

He saw her lift her eyes; he felt
The soft hand's light caressing,
And heard the tremble of her voice,
As if a fault confessing.

"I'm sorry that I spelt the word:
I hate to go above you.
Because,"—the brown eyes lower
told,—
"Because, you see, I love you!"

Still memory to a gray-haired man
That sweet child-face is showing,
Dear girl! the grasses on her grave
Have forty years been growing!

He lives to learn, in life's hard school,
How few who pass above him
Lament their triumph and his loss,
Like her—because they love him.
—Whittier.



The Voice of the Pack

by Edison Marshall

CHAPTER V.

DAN could see only Snowbird's outline at first, just her shadow against the moonlit hillside. His glasses were none to good at long range. And possibly, when she came within range, the first thing that he noticed about her was her stride. The girls he knew didn't walk in quite that free, strong way. She took almost a man-size step; and yet it was curious that she did not seem ungrateful. Dan had a distinct impression that she was floating down to him on the moonlight. She seemed to come with such unutterable smoothness. And then he heard her call lightly thru the darkness.

The sound gave him a distinct sense of surprise. Some way, he had not associated a voice like this with a mountain girl; he had supposed that there would be so many harshening influences in this place. Yet the tone was as clear and full as a trained singer's. It was not a high voice; and yet it seemed simply brimming, as a cup brims with wine, with the rapture of life. It was a self-confident voice too, wholly unaffected and sincere, and wholly without embarrassment.

Then she came close, and Dan saw the moonlight on her face. And so it came about, whether in dreams or wakefulness, he could see nothing else for many hours to come.

Beauty, after all, is wholly a matter of the nearest possible approach to the physical perfection that many centuries of human faces have established as a standard. This perfection in this case does not mean some ideal that has been imaged by a poet, but just the nearest approach to the perfect physical body that nature intended, and which is the flawless example of the type that composes the race. Thus a typical feature is the most beautiful and by this reasoning a composite picture of all the young girl faces in the Anglo-Saxon nations would be the most beautiful face that any painter could conceive. It follows that health is above all the most essential quality to beauty, because disease, from the nature of things, means thwarted growth that could not possibly reach the typical of the race.

The girl who stood in the moonlight had health. She was simply vibrant with health. It brought a light to her eyes, and a color to her cheeks, and life and shimmer to her moonlit hair. It brought curves to her body, and strength and firmness to her limbs, and the grace of a deer to her carriage. Whether she had regular features or not Dan would have been unable to state. He didn't even notice. They weren't important when health was present. Yet there was nothing of the coarse or bold or voluptuous about her. She was just a slender girl, perhaps twenty years of age, and weighing even less than the figure occasionally to be read in the health magazines for girls

of her height. And she was fresh and cool beyond all words to tell. And Dan had no delusions above her attitude toward him. For a long instant she turned her keen, young eyes to his white, thin face; and at once it became abundantly evident that beyond a few girlish speculations she felt no interest in him. After a single moment of rather strained, polite conversation with Dan—just enough to satisfy her idea of the conventions—she began a thrilling tale to her father. And she was still telling it when they reached the house.

Dan held a chair for her in front of the fireplace, and she took it with entire naturalness. He was careful to put it where the firelight was at its height. He wanted to see its effect on the flushed cheeks, the soft dark hair. And then, standing in the shadows, he simply watched her. With the eye of an artist he delighted in her gestures, her rippling enthusiasm, her utter, irrepressible girlishness that all of Time had not years enough to kill.

He decided that she had gray eyes. Gray eyes seemed to be characteristic of the mountain people. Sometimes, when the shadows fell across them, they looked very dark, as if the pines had been reflected in them all day and the image had not yet faded out. But in an instant the shadow flicked away and left only light—light that went into him and did all manner of things to his spirit.

Bill stood watching her, his hands deep in his pockets, evidently a companion of the best. Her father gazed at her with amused tolerance. And Dan—he didn't know in just what way he did look at her. And he didn't have time to decide. In less than fifteen minutes, and wholly without warning she sprang up from her chair and started toward the door.

"Good Lord!" Dan breathed. "If you make such sudden motions as that I'll have heart failure. Where are you going now?"

"Back to my watch," she answered, her tone wholly lacking the personal note which men have learned to expect in the voices of women. And an instant later the three of them saw her retreating shadow as she vanished among the pines.

Dan had to be helped to bed. The long ride had been too hard on his shattered lungs; and nerves and body collapsed an instant after the door

was closed behind the departing girl. He laughed weakly and begged her pardon; and the two men were really very gentle. They told him it was their own fault for permitting him to overdo. Lennox himself blew out the candle in the big, cold bedroom.

Dan saw the door close behind him, and he had an instant's glimpse of the long sweep of the moonlit ridge that stretched beneath the window. Then, all at once, seemingly without warning, it simply blinked out. Not until the next morning did he really

know why. Insomnia was an old acquaintance of Dan's, and he had expected to have some trouble in getting to sleep. His only real trouble was

waking up again when Lennox called him to breakfast. He couldn't believe that the light at his window shade was really that of morning.

"Good Heavens!" his host exploded. "You sleep the sleep of the just." Dan was about to tell him that on the contrary he was a very nervous sleeper, but he thought better of it. Something had surely happened to his insomnia. The next instant he even forgot to wonder about it in the realization that his tired body had been wonderfully refreshed. He had no dread now of the long tramp up the ridge that his host had planned.

But first came target practice. In Dan's baggage he had a certain very plain but serviceable sporting rifle of about thirty-four caliber—a gun that the information department of the large sporting-goods store in Gitchapolis had recommended for his purpose. Except for the few moments in the store, Dan had never held a rifle in his hands.

Of course the actual aiming of a rifle is an extremely simple proposition. A man with fair use of his hands and eyes can pick it up in less time than it takes to tell it. The fine art of marksmanship consists partly in the finer sighting—the instinctive realization of just what fraction of the front sight should be visible thru the rear. But most of all it depends on the control that the nerves have over the muscles. Some men are born rifle shots; and on others it is quite impossible to thrust any skill whatever.

The nerve impulses and the muscular reflexes must be exquisitely tuned, so that the finger presses back on the trigger the identical instant that the mark is seen on the line of the sights. One quarter of a second's delay will usually disturb the aim. There must be no muscular jerk as the trigger is pressed. Shooting was never a sport for blasted nerves. And usually such attributes as the ability to judge distances, the speed and direction of a fleeing object, and the velocity of the wind can only be learned by tireless practice.

When Dan first took the rifle in his hands, Lennox was rather amazed at the ease and naturalness with which he held it. It seemed to come naturally to his shoulder. Lennox scarcely had to tell him how to rest the butt and to drop his chin as he aimed. He began to look rather puzzled. Dan seemed to know all these things by instinct. The first shot, Dan hit the trunk of a five-foot pine at thirty paces.

"But I couldn't very well have missed it!" he replied to Lennox's cheer. "You see, I aimed at the middle—but I just grazed the edge."

The second shot was not so good, missing the tree altogether. And it was a singular thing that he aimed longer and tried harder on this shot than on the first. The third time he tried still harder, and made by far the worst shot of all.

"What's the matter?" he demanded. "I'm getting worse all the time."

Lennox didn't know for sure. But he made a long guess. "It might be beginner's luck," he said. "But I'm inclined to think you're trying too hard. Take it easier—depend more on your instincts. Some marksmen are born good shots and cook themselves trying to follow rules. It might be, by the longest chance, that you're one of them—at least it won't hurt to try."

Dan's reply was to lift the rifle lightly to his shoulder, glance quickly along the trigger, and fire. The bullet struck within one inch of the

For a long time Lennox gazed at him in open-mouthed astonishment. "My stars, boy!" he cried at last. "Was I mistaken in thinking you were a born tenderfoot—after all? Can it be that a little of your old grandfather's skill has been passed down to you? But you can't do it again."

But Dan did do it again. If anything, the bullet was a little nearer the center. And then he aimed at a more distant tree.

But the hammer snapped down instead, the bullet was a little nearer the center. And then he aimed at a more distant tree.

But the hammer snapped down instead, the bullet was a little nearer the center. And then he aimed at a more distant tree. "Your gun only holds five shots," Lennox explained. Reloading, Dan tried a more difficult target—a trunk almost one hundred yards distant. Of course it would have been only child's play to an experienced hunter; but to a tenderfoot it was the difficult mark indeed. Twice out of four shots Dan hit the tree trunk, and one of his two hits was practically a bull's eye. His two misses were the result of the same mistake he had made before—attempts to hold his aim too long.

The shots rang far thru the quiet woods, long-drawn from the echoes that came rocking back from the hills. In contrast with the deep silence that is really an eternal part of the mountains the sound seemed preternaturally loud. All over the great sweep of canyon, the wild creatures heard and were startled. One could easily imagine the Columbian deer, gone to their buckbrush to sleep, springing up and lifting pointing ears. There is no more graceful action in the whole animal world than this first, startled spring of a frightened buck. Then old Wolf, feeding in the berry bushes, heard the sound, too. Wolf has considerably more understanding than most of the wild inhabitants of the forest, and maybe that is why he left his banquet and started falling all over his awkward self in descending the hill. It might be that Lennox would want to procure his guest a sample of bear steak; and Wolf didn't care to be around to suggest such a thing. At least, that would be his train of thought according to those naturalists who insist on ascribing human intelligence to all the forest creatures. But it is true that Wolf had learned to recognize a rifle shot, and he feared it worse than anything on earth.

Far away on the ridge top, a pair of wolves sat together with no more evidence of life than two shadows. One of the most effective accomplishments a wolf possesses is its ability to freeze into a motionless thing, so the sharpest eye can scarcely detect him in the thickets. It is an advantage in hunting, and it is an even greater advantage when being hunted. Yet at the same second they sprang up, simply seemed to spin in the dead pine needles, and brought up with sharp noses pointed and ears erect, facing the valley.

A human being likely would have wondered at their action. It is doubtful that human ears could have detected that faint tremor in the air which was all that was left of the rifle report. But of course this is a question that would be extremely difficult to prove; for as a rule the senses of the larger forest creatures, with the great exception of scent, are not as perfectly developed as those of a human being. A wolf can see better than a man in the darkness, but not nearly as far in the daylight.

But the wolves knew this sound. Too many times they had seen their pack-fellows die in the snow when such a report as this one, only intensified a thousand times, cracked at them thru

the winter air. No animal in all the forest has been as relentlessly hunted as the wolves, and they have learned their lessons. For longer years than most men would care to attempt to count, men have waged a ceaseless war upon them. And they have learned that their safety lies in flight.

Very quietly, and quite without panic, the wolves turned and headed farther into the forests. Possibly no other animal would have been frightened at such a distance. And it is certainly true that in the deep, winter snows not even the wolves would have heeded the sound. The snows bring famine; and when famine comes to keep its sentry-duty over the land, all the other forest laws are immediately forgotten or ignored. The pack forgets all its knowledge of the deadliness of men in the starving times.

The grouse heard the sound, and, silly creatures that they are, even they raised their heads for a single instant from their food. The felines—the great, tawny mountain lions and their smaller cousins, the lynx all devoted at least an instant of concentrated attention to it. A raccoon, sleeping in a pine, opened its eyes, and a lone bull elk, such as some people think is beyond all other things the monarch of the forest, rubbed his neck against a tree trunk and wondered.

But yet there remained two of the larger forest creatures that did not heed at all. One was Urson, the porcupine, whose stupidity is beyond all measuring. He was too slow and patient and dull to give attention to a rifle bullet. And the other was Graycoat the coyote, gray and strange and foam-tipped, on the hillside. Graycoat could hear nothing but strange whinnings and voices that rang ever in his ears. All other sounds were obscured. The reason was extremely simple. In the dog days a certain malady sometimes comes to the wild creatures, and it is dreaded worse than drought or cold or any of the manifold terrors of their lives. No one knows what name they have for this sickness. Human beings call it hydrophobia. And the coyotes are particularly susceptible to it.

Ordinarily the name of coyote is, among the beasts, a synonym for cowardice as well as a certain kind of detested cunning. All the cowardice of a mountain lion and a wolf and a lynx put together doesn't equal the amount the Graycoat carried in the end of his tail. That doesn't mean timidity. Timidity is a trait of the deer, a gift of nature for self-preservation, and no one holds it against them. In fact, it makes them rather appealing. Cowardice is a lack of moral courage to remain and fight when nature has afforded the necessary weapons to fight with. It is sort of a betrayal of nature—a misuse of powers. No one calls a rabbit a coward because it runs away. A warlike rabbit is something that no man has ever seen since the beginning of the world, and probably never will. Nature hasn't given the little animal any weapons.

But this is not true of the wolf or cougar. A wolf has ninety pounds of lightning-quick muscles, and teeth that are nothing but a set of well-sharpened and perfectly arranged daggers. A cougar not only has fangs but talons that can rend flesh more terribly than the cogs of a machine, and strength to make the air hum under his paw as he strikes it down. And so it is an extremely disappointing thing to see either of

these animals flee in terror from an Airedale not half their size—a sight that most mountain men see rather often. The fact that they act with greater courage in the famine times, and that either of them will fight to the very death when brought to bay, are not extenuating circumstances to their cowardice. A mouse will bite the hand that picks it up if it has no other choice.

A coyote is, at least in a measure equipped for fighting. He is smaller than a wolf, and his fangs are almost as terrible. Yet a herd of determined sheep, turning to face him, puts him in a panic. The smallest dog simply petrifies him with terror. And a rifle report—he has been known to put a large part of a county between himself and the source of the sound in the shortest possible time. If a mountain man feels like fighting, he simply calls another a coyote. It is more effective than imputing the virtue of his female ancestors. To be called a coyote means to be termed the lowest, most despised creature of which the imagination can conceive.

And besides being a perfect, unprincipled coward, he is utterly without pride. And that is saying a great deal. Most large animals have more pride than they have intelligence, particularly the bear and the moose. A mature bear, dying before his foes, will often refrain from howling even in the greatest agony. He is simply too proud. A moose greatly dislikes to appear to run away in the presence of enemies. He will walk with the dignity of a bishop until he thinks the brush has obscured him; and then he will simply fly! And there was a dog once, long ago, which, meeting on the highways a dog that was much larger and that could not possibly be mastered, would simply turn away his eyes and pretend not to see him.

A coyote is wholly without this virtue, as well as most of the other virtues of the animal world—because if one started to condemn all the cunning-eating animals of the forest he would soon have precious few of them left—but he also eats old shoes off rubbish pile. Unlike the wolf, he does not even find his courage in the famine times. He has cunning, but cunning is not greatly beloved in men or beasts. Most folk prefer a kindly, blundering awkwardness, a simplicity of heart and spirit, such as are to be found in Wolf the bear.

But Graycoat has one tendency that makes all the other forest creatures regard him with consternation; he is extremely liable to madness. Along in dog days he is seen suddenly to begin to rush thru the thickets, barking and howling and snapping at invisible enemies, with foam dropping from his terrible lips. His eyes grow yellow and strange. And this is the time that even the bull elk turns off his trail. No one cares to meet Graycoat when the hydrophobia is upon him. At such time all his cunning and his terror are quite forgotten in his agony, and he is likely to make an unprovoked charge on Wolf himself.

Now Graycoat came walking stiff-legged thru the thickets. And the forest creatures, from the smallest of the great, forgot the far-off peal of the rifle bullets to get out of his way.

(Continued Next Week)

A RURAL LIBRARY ON WHEELS

If you can't go to the public library, the public library should come to you. That is the opinion of the

American Library Association. At present, only forty per cent of the people in this country are enjoying adequate public library privileges. Traveling motor-truck libraries are one means of reaching those who live in the remote regions. It is for the sake of the sixty per cent that the American Library Association has adopted an enlarged program of service and pledged itself to raise two million dollars to make it come true.

The Universal Brotherhood

Bolshevik Leader: Is there anybody in this mob who knows how to run a printing press?

"I do."

"Good. You're appointed Secretary of the Treasury."—Life.

Give Her Room

Elderly Aunt (to little boy, sliding down the banister): Here, Johnny! I wouldn't do that.

Johnny: 'Course you wouldn't. How would it look—an old lady like you?—Life.

IN SCHOOL-DAYS

Still sits the school-house by the road,
A ragged beggar sunning;
Around it still the sumachs grow,
And blackberry vines are running.

Within, the master's desk is seen,
Deep scarred by raps official;
The warping floor, the battered seats,
The jack-knife's carved initial.

The charcoal frescos on its wall;
Its door's worn sill, betraying

Still memory to a gray-haired man
That sweet child-face is showing.
Dear girl! the grasses on her grave
Have forty years been growing!

He lives to learn, in life's hard school,
How few who pass above him
Lament their triumph and his loss,
Like her—because they love him.

—Whittier.

A Story for Children

The Travel of a Penny

By L. M. K.

WHAT a dark smelly pocket this is! I wish I could get out. This man has no right to have me anyway, for he took me out of the collection plate as it was passed to him in church. I was feeling so happy, for a little girl had carried me to church and I had heard her tell her grandmother that I was going to help feed the French orphans. There I was lying on the plate shining and happy. I was shiny because I was new. It was only a few days ago that I was taken from the bank for the first time by a kind man, the father of the little girl who gave me into the collection. However, just when I was so happy, this miserable old tramp picked me off the plate. He must have thought I was gold for he would never have taken just a copper penny intentionally.

How can I get out? I'm here in this place so long. I'm beginning to smell of stale tobacco and the shine is getting dull from rubbing against old buttons, an old pocket knife, some rusty nails and worst of all, an ancient corn-cob pipe. I feel faint from the odor. Why doesn't he spend me for something. Maybe I'm hidden. I shall try and roll another place so that he can feel me when he puts his hand into his pocket.

I wonder where we are going so fast. A policeman must be chasing us, for I hear someone calling "Stop thief!" My owner must have stolen something else. Oh! I hope the policeman catches him, for then maybe I would get out of this horrid place, where I am not doing a speck of good, The pursued person suddenly stops

and I almost roll out. My hopes are soon cut short, as I am forced back further into my corner when he straightens up. By his sigh of relief and "What luck," I conclude he must have dodged the officer. Well, I suppose I might just as well stop worrying for I shall have to stay here anyway. This kind of a life certainly is dull.

We start to move again and then, rip! His old coat catches on a nail, as he is crawling from his hiding place. I feel a scratch, which pains me dreadfully, but my joy is greater for I see a hole which beckons me. Maybe I can work to it if only those buttons will get out of my way. My freedom is near!

Just when I am getting discouraged again, my enemy stumbles and oh, what joy! I fall onto the pavement and lie there unseen, with the glorious sun beaming down upon my dull countenance. New life starts within me and I have new aspirations. Perhaps I shall still amount to something. This is no sooner thought than accomplished. A little girl, whose clothes are all beragged picks me up with a cry. "Oh, mother, see what I have found. Now, I can help those poor little children way 'cross the water."

Once more I am happy for I am with a lot of companions, and we are all going to the same place. What a jolly time we shall have and at the same time give help to some starving orphans. I don't care what happens to me now as long as I keep going.

The feet that, creeping slow to school,
Went storming out to playing!

Long years ago a winter sun
Shone over it at setting;
Lit up its western window-panes,
And low eaves' icy fretting.

It touched the tangled golden curls,
And brown eyes full of grieving,
Of one who still her steps delayed
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He lives to learn, in life's hard school,
How few who pass above him
Lament their triumph and his loss,
Like her—because they love him.

—Whittier.

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CONSOLIDATED SCHOOL LAW

The action of the Pennsylvania State Grange held at Allentown, disapproving the consolidated schools and recommending that a divided school term of eleven months be adopted in its place will not meet the approval of the most progressive thought of our membership.

Neither does it do justice to the Legislature that enacted the present School Law nor to the state officials who are charged with the enforcement with its many provisions. No sane man thinks for a moment that the Legislature has in mind amending the law so that consolidation shall be compulsory under all conditions, or that the State Superintendent would favor any such drastic action.

The present law was carefully worked out by members of the Legislature, aided by the Legislative Committee of the Pennsylvania State Grange. Four years being required for the completion of the work. The law is not perfect, but it represents the thoughts and opinions of the best minds in the Great Commonwealth of Pennsylvania. It is generally conceded that Pennsylvania has one of the best school laws of any state in the Union.

The law does not make consolidation compulsory, but vests the school board, or the joint school board, with large discretionary powers in establishing such schools and in the control and management of the same. If the schools are not rightly located, suitable transportation provided or competent drivers secured, the trouble is purely a local one and ought not to be charged against the law.

Article XXXVII of the School Law reads as follows:

Consolidation of Public Schools

(a) When any of Board of Consolidate Schools.

(3701) That whenever graded schools can be made to accommodate the pupils of one or more ungraded schools, by consolidating said ungraded school or schools with another school, either graded or ungraded, it shall be the duty of the board of school directors to abandon the one-room school or schools, and, instead of repairing or rebuilding the one-room schoolhouse or schoolhouses, they shall erect a suitable modern building for the purpose of consolidating and properly grading all of the said schools; Provided, that, no pupil of the abandoned schools shall be required to walk more than a mile and a half to the new school building.

Act April 13, 1911, Sec. 1, P. L. 63. This Act was amended July 22, 1919, P. L. 1117. Article XIV, Section 1406 as follows:

The board of school directors of any school district in this Commonwealth may, on account of the small number of pupils in attendance, or the condition of the then existing school building, or for the purpose of better graduation and classification, or for economical or other reasons, close and consolidate any one or more of the public schools in its district, and, upon such school or schools being so closed, the pupils who belong to the same shall be assigned to other schools; Provided, that whenever the average term attendance of pupils regularly enrolled at any one-room school in any school district of the fourth class is ten or less than ten, the board of school directors shall close such school, and provide proper transportation for the pupils of

such closed school to and from the nearest or most convenient school, to which the pupils shall be assigned. If the board of school directors do not deem it feasible to close such school, they may present their petition to the State Board of Education, showing the reasons why such school should not be closed; thereupon the State Board of Education shall consider such petition, and shall make such order as may seem just in the premises; etc.

Thus it will be seen that consolidation is not compulsory, nor has the State Superintendent the authority to make it so, the final action being left with the school board and the State Board of Education. This is as it should be, and prevents the centralizing of too much power in the hands of one man. The rights of the school board are respected and the welfare of the child given due consideration.

The Grange should become constructive rather than destructive towards our School System. The school problem is too important and far reaching to allow factions or petty jealousies to interfere. It calls for the best thought and united support of every loyal American citizen. Let us discard the bad and hold fast to the good.

In a later article we shall attempt to point out some of the evils of a divided school term and compare the advantages of a consolidated school with those of the one-room school.—E. B. Dorsett.

A STATE FAIR

I believe that Pennsylvania should have a State Fair. This state fair would be the means of showing to other states and to the world just where Pennsylvania stands as an agricultural state. This state fair should be supported by appropriations from the State Treasury to the extent that it would give it some degree of permanence. By that I mean that suitable buildings should be erected and added to from year to year as the needs require and thus make of it an occasion to be looked forward to.

On the other hand, if it should be conducted upon the plan that many of our county fairs are now carried on it would be a blot upon the fair name of our state. The county fairs with their fakirs, indecent shows and gambling booths are a disgrace to the name of agriculture. Those who are engaged in this industry of agriculture should not permit such things to exist.—V. Ross Nicodemus.

PENNSYLVANIA'S FORESTS

When we speak of the forests of the future, it is more than merely guessing. Combining our knowledge of the past with our experience of the present, we can speak with some exactness about the future as it applies to our forest lands.

Of course there are ifs and buts to be considered. IF we keep down the fires; IF we put an end to destructive lumbering and other forms of forest devastation; IF we apply the knowledge we have and so keep trees growing on the lands which should have trees upon them; and IF we take over the Pennsylvania desert and reforest it; THEN the Pennsylvania forests of the future can be spoken of with confidence, and their usefulness fifty years hence can be definitely predicted now.

BUT—Unless these things are done; unless the people of the state,

casting aside their indifference, actually do what is necessary for forest development; unless the fires are stopped; unless further devastation is prevented; and unless the Pennsylvania Desert is transformed into forests and set to work—then our prediction will surely fail.

One of two things is bound to happen to the forests of the future. Either they will be progressively more and more productive, or they will be as they are now—only worse.

I have strong faith in the good sense of the people of Pennsylvania and because of that faith make bold to predict the forests of the future. I am confident that the readers of Pennsylvania Farmer, with whom I have talked for a number of weeks about our forests and forest conditions, are a unit in their desire to assist the Commonwealth in its plans to extend the public forest work to the point where it will actually succeed.—Gifford Pinchot.

FARM READING

A daily newspaper, the community daily or weekly newspaper, and a farm journal—these are the minimum periodical reading needs of the farm home.

The daily newspaper views the affairs of the state, the nation, the world.

The community newspaper is the voice of the actions, the needs, and the purposes of the community.

The farm journal is the trade magazine of the farmer, as important to him as the grocery trade journal is to the grocer or the drug journal to the druggist.

These papers do not compete. They cover three distinct fields, no one of which the farmer can afford to neglect.

As was stated, however, these three are a minimum. A magazine of news and opinion, a woman's magazine, a magazine of fiction and special articles, a children's magazine—these are worth while also. Most farmers, too, will want more than one farm journal, the additional ones relating specifically to livestock, to fruit, or to other phases of farming in which the individual is especially interested.

The cost of all the publications referred to is small in comparison with their value and interest. There is no better investment for the farmer and his family. And now winter is approaching—the season when on the farm there is most time for reading.—Kansas Industrialist.

THE DAIRY COW

The dairy cow's a thing of charm; she lifts the mortgage from the farm, and makes the farmer's life more sweet, and sets him down on easy street. Where'er the dairy cow is queen, a country prosperous is seen, and dairymen in joyful ranks, are making bullock in the banks. Why plug along the old sad way, producing nutmegs, corn and hay, and putting up a bankrupt wall if one year's crop should chance to fail? There is a better method now—the method of the dairy cow; this critter always earns her keep, and piles up riches while you sleep and pays the taxes and the rents; and here in Idaho, gents, we have the climate and the feed, and all conditions dairies need. So let us boost the dairy cow, which beats the old breech leading plow; the Holstein and the Jersey, too, as smooth as any cow in view. Let's talk up dairies, milk and cream, the safest money making scheme.—Walt Mason in Chicago Daily News.



Farmers everywhere are buying them. Warm as an arctic. Absolutely waterproof.



The "U.S." Walrus

Wash them clean—slip them off

The most convenient overshoes you ever wore

CLEANED with a dash of water while they're still on your feet—buckled or unbuckled in an instant—warm and water-tight always—

That's why farmers everywhere are buying the U. S. Walrus. You need a pair for dozens of odd jobs around the farm.

You slip the U. S. Walrus on over your leather shoes—and push it off with your toe when you're through. Its warm, fleecy lining keeps your feet comfortable in the coldest weather.

Wherever you go—tramping through snow or splashing through water—the U. S. Walrus gives you perfect protection. And then at your doorstep—no matter how muddy they are—a moment's rinse at the pump or faucet washes their smooth rubber surface clean.

Made by the oldest and largest rubber manufacturer in the world, the U. S. Walrus is built to wear. At the very points where

ordinary overshoes are weakest, the U. S. Walrus has been made *strongest*. Every point of strain is heavily reinforced. Ask your dealer to show you a pair!

Other types of "U.S." Footwear—built for rough service

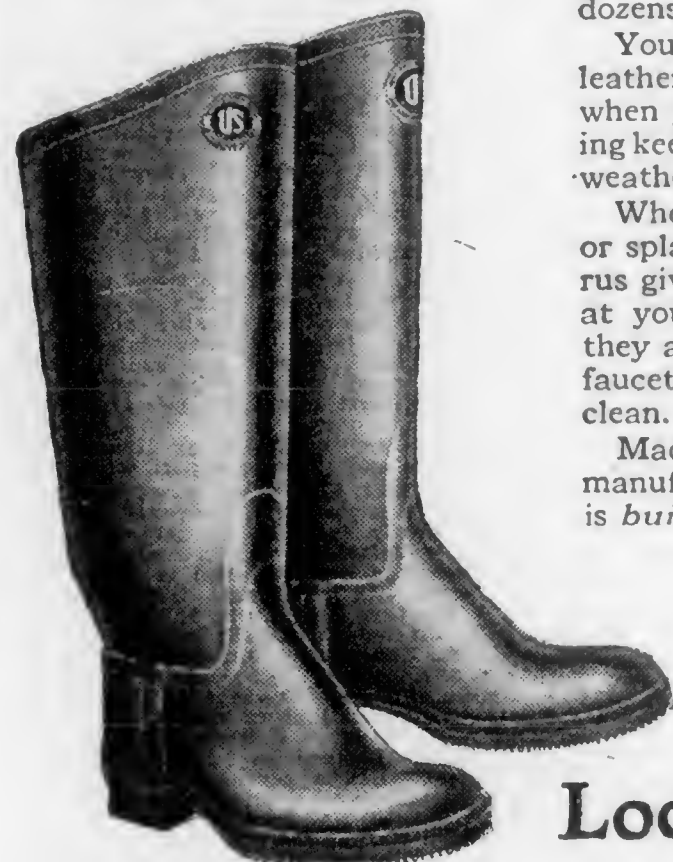
U. S. Boots have all the wear and comfort which our 74 years of experience can give them.

U. S. Bootees lace on over the sock like a leather shoe. You can wear them all day long in mud and water—your feet will stay dry and comfortable.

The U. S. line of footwear has a type for every need—arctics, rubbers, "overs." Every one is backed by over half a century of experience. The rubber comes from our own plantations—the whole process of manufacture is supervised by experts.

Always look for the U. S. Seal—it means solid wear and long service for your money.

"U. S." Boots—Reinforced where the wear is hardest. Made in all sizes and styles—Hip, Half hip, and Knee. In red, black, and white.

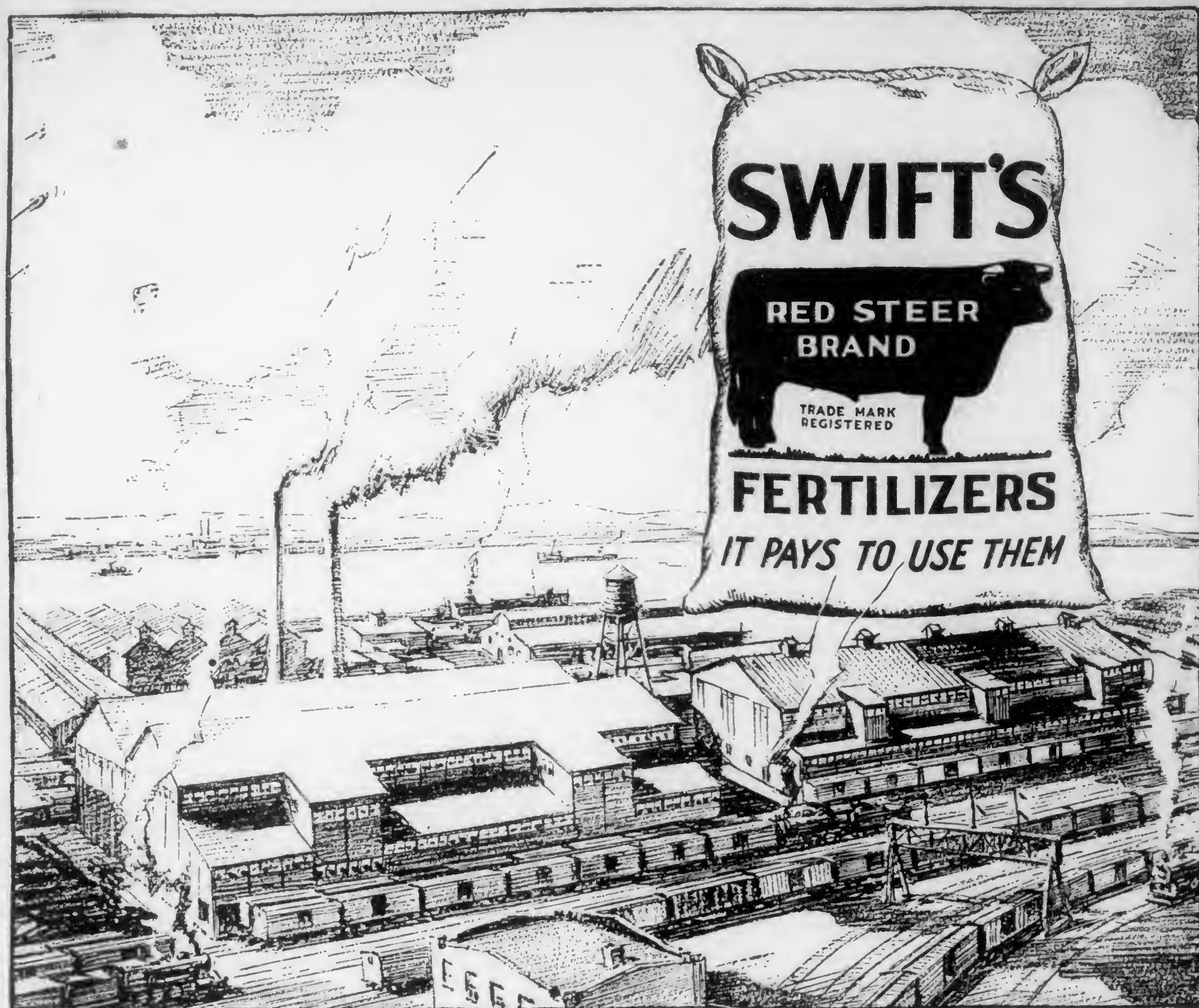


United States Rubber Company

Look for this seal



on all "U.S." Footwear



Fertilizers that are made right

SWIFT & Company has everything necessary to make fertilizers right: trained chemists—agricultural experts—manufacturing equipment.

The modern machinery and ample storage in our twenty-four large fertilizer factories enable us to manufacture for you a fertilizer which has all of the ingredients evenly mixed and thoroughly cured.

Through field and laboratory experiments Swift & Company knows the various raw materials, both organic and chemical, to process and combine to make fertilizers best suited for different crops and soils.

Swift's Red Steer Fertilizers furnish available plant food from seeding to complete maturity and because they are evenly mixed, each plant receives its proper proportion of plant food, thus insuring largest yields.

The Red Steer on the bag is a guarantee of highest quality.

For more than fifty years Swift & Company has maintained the reputation of making each Swift product the best of its kind.

You can depend upon Swift's Red Steer Fertilizers. Order now from our local dealer or our nearest Sales Division.

Swift & Company, Dept. 11

(Fertilizer Works)

Baltimore, Maryland Cleveland, Ohio

Grow your crops at less cost

Many farmers are making more profit from fifty acres properly fertilized than others are making from twice as many acres without fertilizer.

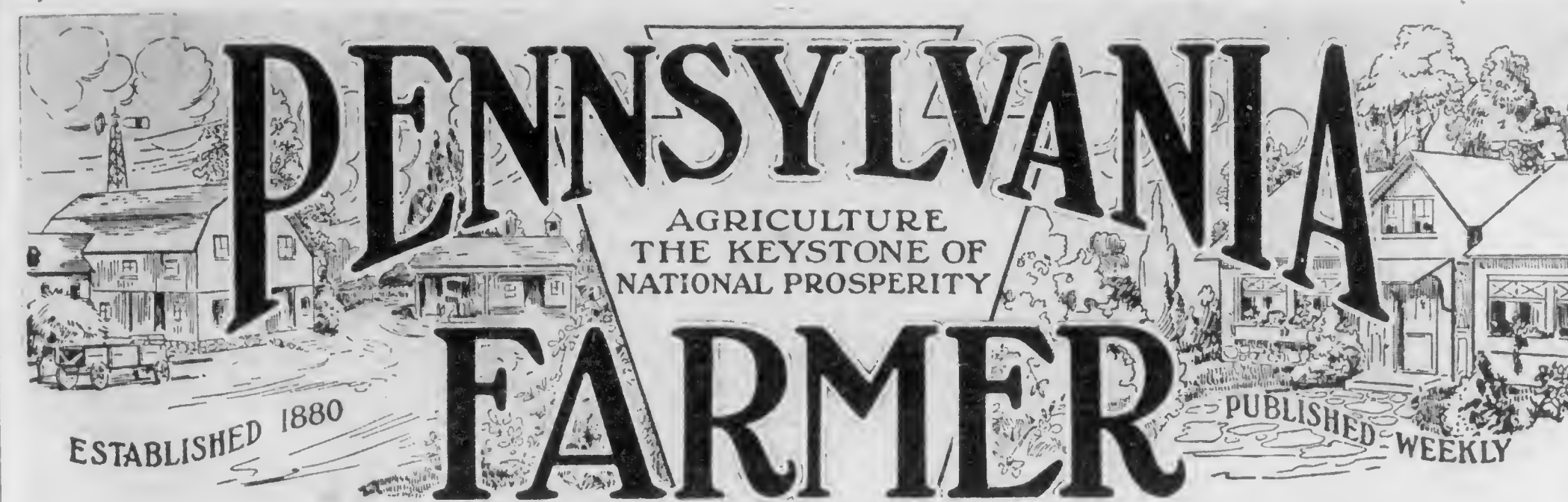
It costs no more for preparation of land, seed and seeding, ground rental or interest on an acre of land yielding 80 bushels of best corn or a big truck crop of good quality than for one yielding half as much of poor quality.

One sure way of growing crops at less cost is to secure more yield per acre and per man. This you can do by using Swift's Red Steer Fertilizers.

The extra bushels or pounds produced per acre by Swift's Red Steer Fertilizers are the ones that add greatly to your profit. Only the cost of fertilizer can be charged against this extra yield.

"IT PAYS TO USE THEM"

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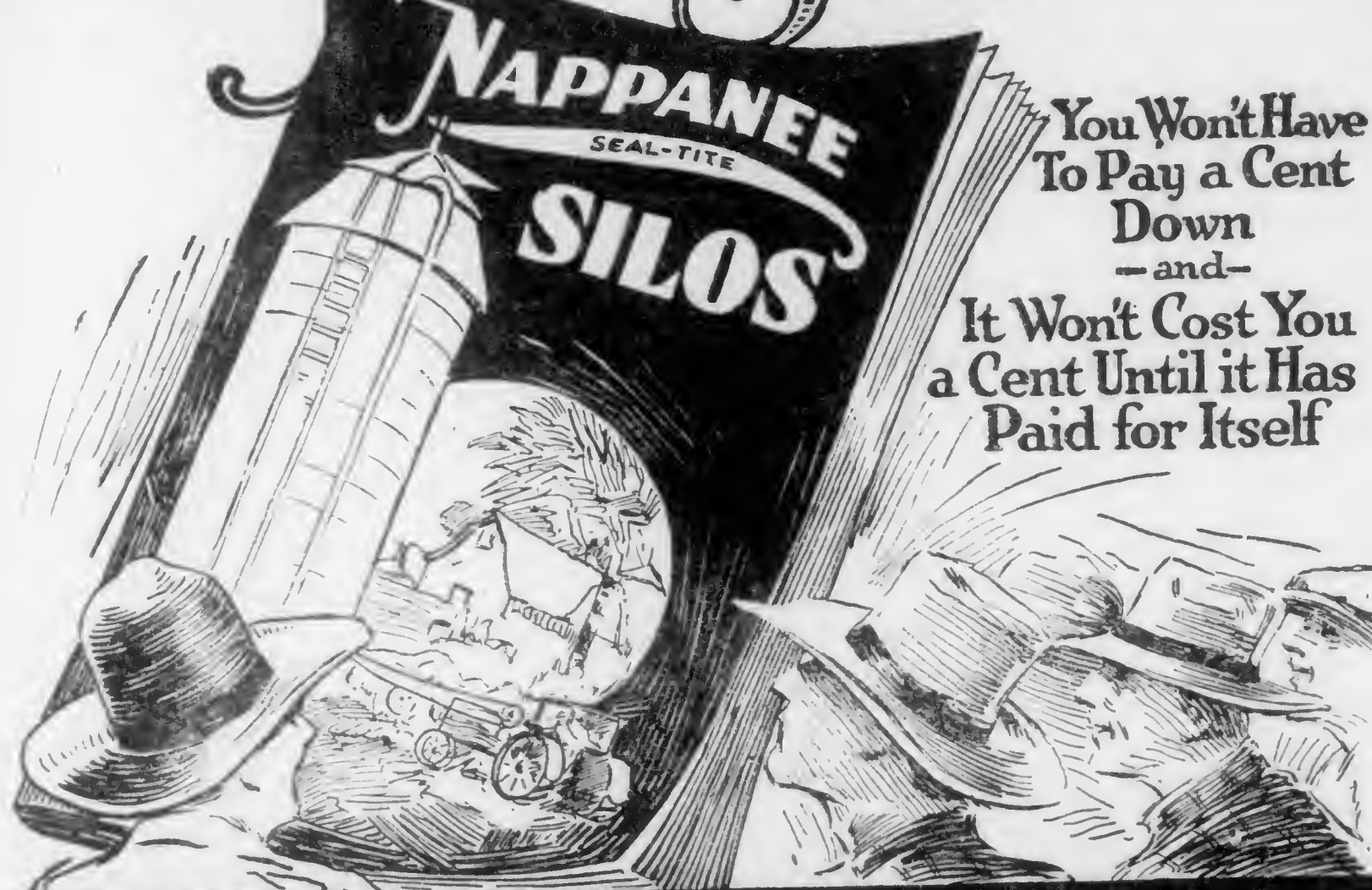
Number 2

Entered as Second-Class Matter, at the Post Office at Philadelphia, Pa., under the Act of March 3, 1879.
PHILADELPHIA, PA., SATURDAY, JANUARY 8, 1921.

Volume 49



BUY YOUR NAPPANEE SILO NOW



You Won't Have To Pay a Cent Down —and— It Won't Cost You a Cent Until it Has Paid for Itself

This BIG FREE BOOK Tells How

You would put a new silo on your farm tomorrow, if you thought you could get one for nothing—wouldn't you? Well, we have a Silo Selling Plan whereby you can do just that. You can place a NAPPANEE Seal-Tite SILO on your farm and it won't cost you a cent. That sounds interesting—doesn't it? Our big FREE Book tells how you can order your NAPPANEE SILO now and make it pay for itself on your farm. Think of it! On this novel plan you virtually get a silo for nothing. A silo that will earn its own cost the first year or so and make you a couple of hundred dollars clear profit every year after that.

Better write for your copy of our big silo book today and find out all about this easy way to own a silo. The book is FREE and postpaid for the asking.

Over 15,000 NAPPANEE SILOS in Use on American Farms

Thousands of American Farmers have taken advantage of our novel Silo Selling Plan. The fact that NAPPANEE SILOS are being used in every part of the country from New England to Texas, proves that this Nappanee Selling Plan is ALL RIGHT and that NAPPANEE SILOS are "making good" wherever they go. Get our big FREE Silo Book and see for yourself the many gratifying letters of satisfaction which we have received from NAPPANEE owners. Many say that their silo paid for itself with the first crop they put in it. They tell why they like the NAPPANEE better than any other silo and some give actual facts and figures on the profit the NAPPANEE has made them.

If the NAPPANEE will produce big returns for so many other farmers it will do the same for you. And on our liberal Selling Plan you cannot afford to get along without a NAPPANEE another day.

Read What These Pennsylvania Farmers Say:

Franklin, Pennsylvania.
Gentlemen: I have a Dutch Farm and feed 25 to 30 head of cattle. I have the Nappanee Silo and it is the best thing I ever bought for the farm. The money I spent for your silo was the best investment I ever made. The Nappanee has the best under the floor ever seen on any silo. I bought the first Nappanee Silo in my section and one of my neighbors said he would have nothing but a Nappanee silo after coming to my place for two winters, and looking at my evidence, he bought a Nappanee Silo, too, last spring.
W. H. Kline.

We have many other letters as gratifying as those above in our files from this state and other states, but the limited space does not allow us to print them all.

Send for Our FREE Silo Book Today—Use the Coupon

Just fill out the coupon with your name and address, or drop us a postal if you prefer, and we will send you FREE and postpaid our new 1921 NAPPANEE Silo Book—the biggest and finest silo catalog ever printed.

It tells all about our novel Silo Selling Plan whereby you can get a NAPPANEE SILO practically for nothing. It also tells all about how NAPPANEE SILOS are made and their 25 points of superior merit, such as our Perfect Splice which is air-tight and rot-proof, our Anchoring System which is storm-proof, our Hip Roof which gives more room, our Ladder that is accident-proof, our Seal-Tite Silo Doors that are real man-sized and will never warp, and many other exclusive improvements.

No matter when you expect to put up a silo send your name and address for this BIG, FREE SILO BOOK TODAY.

NAPPANEE LUMBER & MFG. CO.
Box 47 NAPPANEE, INDIANA

Name.....
Post Office.....
State..... R.F.D.....

NINE Out of Every TEN Silos Are Built of Wood Why?

The next time you drive to town or to the County seat, take particular note of the silos in your community, just for your own satisfaction.

We venture to predict that in your neighborhood, just like most farming districts throughout the country—that probably nine out of every ten silos you pass (or at least a great majority) will be built of wood. Why?

There Must Be Some Good Reason for This

Your own good, common sense will tell you that it would be absolutely impossible to persuade the majority of the hard headed, successful farmers in your community who own silos to build them of wood unless there were some mighty good sound reasons for giving wood silos the preference. And you can "bet your bottom dollar" there are some good logical reasons why most farmers buy wood silos.

Wood Silos Give Better Service

Did you ever hear anyone say that silos of other materials will cure silage better or keep it better than wood? No. But many agricultural experts, chemists and thousands of farmers who speak from actual experience emphatically assert that wood silos make and keep silage far better than do other kinds of silos.

It takes a certain amount of heat to cause fermentation in the silo and cure silage properly for wholesome feed. Wood is the only material non-conductive of heat and cold. Wood keeps in the heat necessary for the proper fermentation, and it also keeps out the extreme cold that causes silage to freeze.

Of course, you have to paint a wood silo every five or six years on the outside. But painting a wood silo on the outside is a whole lot easier than "doctoring" up the walls on the silo inside with some preservative preparation every few years. And remember, when the roof is on the silo you can't get a ladder inside of it.

These are some of the reasons why the majority of silos throughout the country are built of wood. And the best wood silo you can buy is a NAPPANEE Seal-Tite SILO, because they are the most practical, the most serviceable, the most useful and convenient wood silo for any farm—the silo that will give you the biggest value for your money.

Wood Silos Cost Less

A NAPPANEE SILO costs just about half the price asked for silos built of other materials. And the cost of erecting it is far less, too. You don't need a crew of skilled mechanics to erect a NAPPANEE. The average farmer can do the work himself with the help of a farm hand and finish the job in two or three days time.

Where else can you find a silo that will give you all the convenient, useful, time and labor saving features that you will find incorporated in the NAPPANEE, such as the Double Anchor System that is as near storm-proof as it is possible to make—the real Man-Sized Doors that are six inches wider than the average silo door and give ample room and comfort in entering the NAPPANEE—the extra heavy metal Door Fasteners that seal up the NAPPANEE as tight as a fruit jar—the safe and sane Ladder, built so it is almost impossible to slip and fall—the Hip Roof Rafter that are furnished FREE with the NAPPANEE and add more room to the silo, and so on all down the line.

A NAPPANEE SILO is easy to erect, easy to fill and will cure your silage perfectly. It will keep the silage in A1 condition so that it is safe to feed to your live stock. Yet the NAPPANEE costs you no more and sometimes a great deal less than other silos.

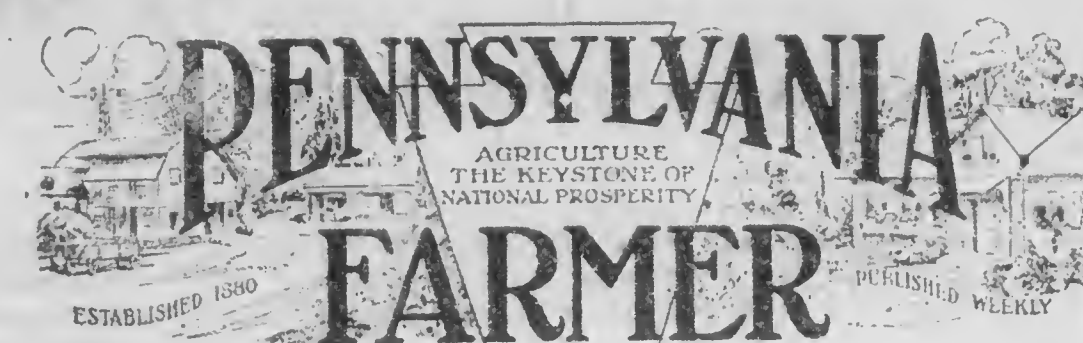
The Silo You Ought To Have At the Price You Ought To Pay

A NAPPANEE SILO on your farm will make every acre of corn you put into it do the work of two acres the old fashioned way. And the NAPPANEE is backed by an iron-clad guarantee that it will not only give you satisfactory service, but will pay for itself on your farm.

Find out about the NAPPANEE SILO today. Find out about our new payment plan, whereby you can put a NAPPANEE on your farm now and make it pay its own way. Don't fail to write for our big FREE 1921 NAPPANEE SILO BOOK as offered on this page—the biggest and most interesting silo catalog ever published. It tells all about the many time-saving and labor-saving features on NAPPANEE SILOS not found on other silos. It also tells all about our novel silo selling plan that makes it possible for you to own a NAPPANEE without it really costing you a cent. This big silo book is FREE and postpaid. Mail the coupon on this page for it, or a postal card will bring it by return mail.

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Two Years, \$1.25
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The Lawrence
Publishing Company
Philadelphia

Volume 49

PHILADELPHIA, PA., SATURDAY, JANUARY 8, 1921

Number 2

Lime Requirements of Pennsylvania Soils

A Survey Made by State College That Should Prove Interesting and Valuable

Editor's Note.—The following map of Pennsylvania and the text matter are extracted from a recent publication by the Experiment Station, State College, Pa. The bulletin, No. 164, gives a summary of the survey made to learn the lime requirements of the different types of soil found in the state. By comparing the legends at the bottom with a given locality the lime requirement is easily seen.

THERE is no one soil condition more prevalent in the humid region and possibly none that has a greater controlling influence on the growth of crop-producing plants than soil acidity. The properties of such soils have been the subject of careful study for a number of years. As the result of these investigations, many conflicting theories have been advanced due to the fact that this undesirable soil condition is a complex one involving many factors which tend to arrest the normal functions of the soil. The presence of toxic substances, both organic and inorganic, the absence of basic lime and decreased availability of essential plant food constituents, no doubt, all play a part in bringing about conditions unfavorable to the best development of the chemical, physical and biological properties of the soil. It has been shown conclusively that when some form of basic lime is applied in sufficient quantities to these sour or acid soils the undesirable properties disappear and the soil will again become productive under proper management. The question of economic importance is therefore one involving the quantitative application of lime in whatever form it may be used.

The presence of sour soils in Pennsylvania and the beneficial results secured from use of lime on such soils have been known for many years. The extent and degree of acidity of the various soil series throughout the state, however, have not until recently been the subject of systematic study. In the absence of definite knowledge concerning the lime needs of the soils of the state the beneficial results derived thru the use of amounts far in excess of that necessary to meet the immediate soil needs. This liming practice has especially been the case in Southeastern Pennsylvania and thruout the great limestone valley sections of the state. On the other hand, where lime has been more expensive in sections remote from the natural lime supplies of the state, it has been used in the majority of cases too sparingly, or not at all. The most economical use of agricultural lime for soil improvement can, therefore, be brought about to the best advantage thru a careful systematic study of the lime need of the various soils. Samples of soil sent to the Experiment Station from time to time have shown upon examination to vary to

CONDUCTED BY PROF. J. W. WHITE

soil to bring about an alkaline condition. It does not necessarily indicate the amount of lime required by a soil to produce a crop of clover, but rather the maximum quantity of lime now considered desirable for a single application under general farm conditions. Lime requirement and a marked degree in the actual amount of lime required to correct the sour property of the soil. These facts, coincident with the increased cost of all forms of agricultural lime, led to the present study with the hope of securing more definite information concerning the soils of the state with respect to their relative need for lime.

The Meaning of Lime Requirement

The lime requirement is a term used to denote the amount of lime necessary to be added to a

soil to bring about an alkaline condition. It does not necessarily indicate the amount of lime required by a soil to produce a crop of clover, but rather the maximum quantity of lime now considered desirable for a single application under general farm conditions. Lime requirement and a marked degree in the actual amount of lime required to correct the sour property of the soil. These facts, coincident with the increased cost of all forms of agricultural lime, led to the present study with the hope of securing more definite information concerning the soils of the state with respect to their relative need for lime.

The other series will be divided into two groups. (1) The River Bottom Soils, (2) Miscellaneous group.

The Hagerstown series is the only extensive area of soil derived from the weathering of limestone and represents less than 5 per cent of the soil area of the state. The Westmoreland soils of Southwestern Pennsylvania are partly derived from limestone and differ largely from the De

Kalb soils in this respect. Approximately 85 per cent of the soils of the state are derived from material other than limestone or calcareous shale.

Influence of Soil Texture on Lime Requirement

The DeKalb, Southeastern Group and River Bottom soils show a higher lime requirement on the sandy soils, while the stony phase in the case of the Upshur, Hagerstown and Westmoreland soils is the most acid. The Volusia silt and clay loam is the most acid of that series. The general average for all series shows the sandy phase slightly the most acid.

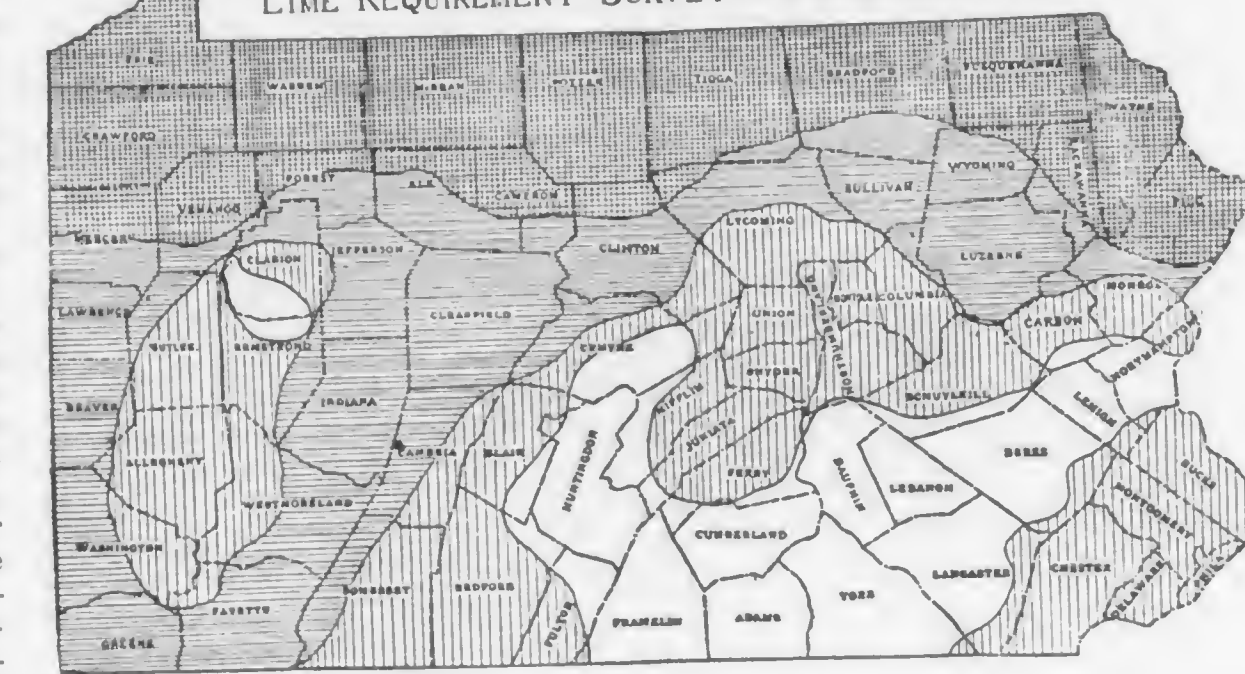
Relative Growth of Clover on Limed and Unlimed Soils

By reference to the description soil sheet which accompanied each sample collected, it will be seen that question 8 deals with behavior of legumes (especially clover) on limed and unlimed soils. There are 1200 replies to question 8 which are expressed in terms of percentage of the total number of areas which produce clover and of those on which clover fails. The term (area) as used here and in the later discussion does not refer to surface extent, but to those portions of land that are represented by individual soil samples taken in this survey. Good and medium growth are necessarily relative terms; however, a study will show a close relationship of the growth of clover to the liming of the soil.

One way to help save young apple trees from damage by mice is to tramp the snow solidly around the trunk.

Pruning is one of the odd jobs that may be done at any time during the winter when weather permits.

LIME REQUIREMENT SURVEY OF PENNSYLVANIA.



Over 1000 lbs. CaCO₃ per A. 2000-4000 lbs. CaCO₃ per A. 1000-2000 lbs. CaCO₃ per A. 0-1000 lbs. CaCO₃ per A.

acidity are often used as synonymous terms though they may not mean the same thing. The lime requirement probably takes care of both the acidity and the absorptive power of the soil for lime, both of which must be satisfied before the soil will show an excess of lime necessary to produce an alkaline reaction.

The lime requirement results discussed in this publication are meant to convey the amount of pure calcium carbonate or limestone, required in pounds per acre to produce an alkaline soil to the depth of seven inches. The lime requirement results were obtained by a laboratory method known to soil chemists as the Velch, or lime water method. This method is one of many proposed for soil studies of this nature.

The Soils of Pennsylvania

The State of Pennsylvania is approximately 150 miles in width (north and south) and 280 miles long. The soils of the state have been divided into 7 provinces and 47 series (Reconnois-

Notes From National and Nearby State Granges

Showing the Drift of Farmer Sentiment on Public Questions—Continued From Last Week

OHIO STATE GRANGE MEETING

The forty-eighth annual session of the Ohio State Grange was held in Cleveland, Dec. 14-16, with the largest attendance (around 2500) in the history of the order. It was a wonderful meeting in several respects. The Cleveland dailies rose to the occasion and each day tried to make the city people realize that this coming of the Ohio State Grange was an opportunity and event of unusual importance for the city folks.

Cuyahoga County Farm Products Show

That the farmers were taken seriously in Cleveland at least during Grange week, was one result of the splendid and extensive exhibit of farm products staged at the chamber of commerce by Cuyahoga County Granges under the direction of John Bush of Olmsted Falls Grange.

In addition to having several lessons for the city dweller as to the original cost of the finished product, such as clothing and shoes, another comprehensive exhibit detailed the materials necessary to produce 100 lb. milk, the cost thereof and the food value of milk, butter and cheese expressed in terms of beefsteak, eggs, chicken, ham and codfish. It was shown that the five-gallon can of milk for which the farmer receives \$1.60 is sold for \$8, when it is bottled and retailed at 8¢ the half pint in the restaurant.

The entire exhibit was very pleasing to the eye and the wide range of Cuyahoga County products not only illustrated a wider diversification of crops than perhaps any other Ohio county, but also showed that in arranging such an exhibit Cuyahoga County Granges possess an almost unlimited amount of endurance and the ability to carry thru a project successfully.

National Master Lowell Was There

A feature of the first day's program was an address by National Grange Master Sherman J. Lowell, who hails from Old Fredonia Grange, No. 1, Chautauque Co., N. Y., which was the first Grange ever organized in the world and which has had a continuous existence since April, 1868; its membership now is over 800. Worthy Master Lowell spoke at the public reception Tuesday, when the program was in the hands of Cleveland city officials. He dwelt particularly on the great need, that consumers must help producers eliminate some of the 14 profits taken between the farmer and the city housewife. He recounted the development in New York State of the Grange-Dairymen's League-Farm Bureau Exchange on a \$1,000,000 capitalization to buy and sell for its members.

State Master Taber's Address

Lewis J. Taber, of Belmont County, the well-beloved leader of the grange in Ohio for the past six years, was re-elected again this year for his fourth term by such an enthusiastically unanimous vote that it was an ovation. His salary was quite as unanimously raised (from \$1,200 to \$2,400) to make it financially possible for him to retain the leadership for another two years in this critical juncture of agriculture. The Grange wanted to make it at least \$3,000, but he protested.

Mr. Taber said in his annual message: "The American farmer has just received one of the most staggering blows ever administered to any industry." Farmers have expected and been willing to return to lower price levels and they had hoped that other industries would also deflate in proportion, but as yet there is little decline in equipment necessary for crop production. Because farmers were not so effectively organized as other industries the deflation has hit them hardest; credit accommodation has favored other industries, while the farmer, by reason of his once-a-year turnover of crop investment, cannot get easy accommodation. "The American farmer is tired of developing millionaire grain gamblers, packers and food distributors while farm tenantry increases and boys and girls leave our farms by the thousands."

Co-operative Marketing

"Farmers," says Mr. Taber, "must turn to community and commodity methods of doing more of our own distribution of produce. Agriculture must organize efficiently around meat, milk, grain, fruit and must realize the importance of strong financing for such commodity organizations." These ideals will have to be realized by co-operative efforts of all rural organizations. We must not cross purpose one another. Cost of production must be considered.

The past three years the Ohio State Grange co-operative department has, without charge for time or expenses, handled millions of pounds of twine and thousands of tons of fertilizer for members at a saving to them of over \$100,000. This service should henceforth pay the overhead for time and expense. We should incorporate with capital stock, enough to do business in a strictly business way, then return all profits to members of this corporation. Here in Ohio the Grange, farm bureau and other farmers' co-operative associations might incorporate with at least \$1,000,000 capital, as has been done in New York. The directors should represent equally the component organizations. Or else we might organize a holding company to act for existing co-operative agencies.

Ohio Grange Growth and Finances

In point of new Granges and membership increase 1920 was the best year since 1875. Five Pomona (county), 33 juvenile and 86 subordinate Granges were organized and three subordinates re-organized. From 821 Granges, with 87,509 members on Dec. 1, last year to 909 Granges with over 102,000 members on Dec. 1 this year was the report of Sec'y W. G. Vanderbark, and every one of these is in good standing on the secretary's books.

Increase in Dues

Action was taken to increase minimum dues in subordinate Granges, beginning Jan. 1, 1921, to 51 cents a month instead of 10 cents as now, and to raise the initiation fee to \$2 for men and \$1 for women, girls and boys. Quarterly dues to state Grange were increased to 11 cents (from 9 cents); and fee paid by sub-Granges to state Grange on new members is to be 50 cents instead of 25 cents as heretofore.

Grange and Farm Bureau

It was very inspiring to note the clear conception in the minds of the bulk of the members present of the ideal relation of the Grange and the farm bureau. In the deputies' meeting one found the best deputies active supporters of the farm bureau in their counties.

MARYLAND STATE GRANGE

It would have been well if all of our members could have attended the 48th session of the Maryland State Grange at Frederick, Dec. 6th to 9th inclusive. They would have gone back to their subordinate granges full of renewed zeal, determined to stand by and "carry on."

Monday evening, Dec. 6th, the meeting began with a reception. On a large stage on which palms and blooming plants were gracefully arranged, Brother A. S. Remsburg, Master of the Frederick County Pomona, welcomed the visiting delegates and all others. The Flood College girls gave us several songs, the Misses Staley danced delightfully and our own Maryland University quartette sang for us.

Brother Emsey L. Coblenz urged the boys gone cityward to return to the farms. He said: "I am amazed that young men will leave excellent homes and glowing prospects for the uncertainty of city life and work in factories, and I cannot understand why a country girl will refuse the hand of a farmer, roughened by toil, and accept that of a hireling of the city to live in a stuffy flat without a foot of ground attached. I can say this—the country and state need brains, and the country is the place to find them."

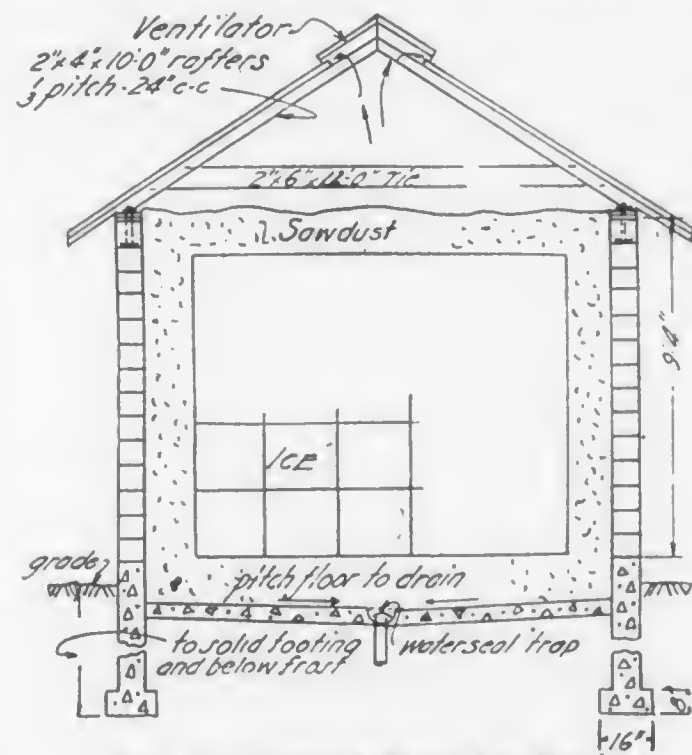
Monday and Tuesday evening meetings were open to the public and well attended. On the latter evening Dr. A. F. Woods, president of the University of Maryland, made an address on "The Future of Agricultural Organization in America." Later in the evening Secretary of the United States Department of Agriculture E. T. Meredith arrived. He told the farmers that the problem they are facing demands the wisdom of a Solomon or an Edison and he who can find a solution for that problem, high wages and low prices for products, will be greater than the two. He stated the infinitesimal amount of money devoted to agriculture, that out of every \$400 raised in taxation, \$374 goes to war or war purposes and then are left but \$26 for other things, and but \$1 of that \$26 is devoted to agriculture. He also said that if the government spends 93 cents out of every dollar for war we should insist that the other seven cents be spent for agriculture.

Secretary Meredith stated that if the quarter of a million dollars annually expended for "free seeds" could be diverted to agriculture it would be used for a good purpose and that the "free seed idea" was merely an advertisement for the senators or congressmen.

The day sessions of Tuesday, Wednesday and Thursday were devoted to business. No definite marketing program was outlined. Many resolutions were adopted. Among them, one favoring an appropriation of \$40,000,000 for agriculture and against \$250,000 used for "free seed." Another, favoring the enforcement of the Volstead Act and against any change in same.

By resolutions the principles of the Capper-Volstead bill, the French truth-in-fabric bill, Standard Containers (Vestal bill), and the Kahn-Wadsworth bill were endorsed.

One hundred and eleven candidates received the Fifth Degree and 215 received the Sixth Degree. The next convention of the Maryland State Grange will be held in Cambridge, Dorchester County, December, 1921.—Marylander.



Plan for Concrete Block Ice House



Concrete Block Ice House Complete

Soils and Fertilizers

Conducted by Dr. J. G. Lipman

Our readers are invited to send us their problems on soils and fertilizers and they will be answered by Dr. Lipman in this column.

AVAILABLE PLANT-FOOD

THE manufacturer's definition of available plant-food is somewhat different from the soil investigator's or the farmer's definition. By "available" plant-food the manufacturer means laboratory availability, that is, the fertilizer manufactured by him and containing available plant-food must meet certain chemical tests. The farmer and soil investigator think of plant-food in terms of crop yields. It is evident that the season, the climate and the soil type have much to do with the rate at which food is taken up by plants from the soil. No correct forecast can be made on this point, since growing conditions are not the same from season to season or in different soils.

It is recognized, nevertheless, that fertilizers which readily dissolve in water or in certain chemical reagents will, under average conditions, be readily taken up by growing crops. Hence, it is the manufacturer's effort to produce fertilizers that show high-rate of solubility. Among the best known fertilizers many meet this solubility test. For instance, nitrate of soda, sulfate of ammonia and muriate and sulfate of potash are easily soluble in water. A very large proportion of the phosphoric acid and lime in acid phosphate is also readily soluble in water. In materials like bone meal, ground fish and basic slag the phosphate of lime dissolves readily in citrate of ammonia or citric acid. These are solvents, or reagents as the chemist calls them, that should indicate the crop-value of phosphates.

Of late years there has been much progress made in the manufacturing of fertilizers from the standpoint of availability. Where a few years ago acid phosphate containing 14 per cent of available phosphoric acid was the standard product, there is now a tendency to use material that contains 16 or even 17 per cent of available phosphoric acid. Further progress in this direction is indicated by the manufacture of so-called double superphosphates. One or two of the large mining companies producing sulfuric acid as a by-product are seriously considering the manufacture of double superphosphate containing 45 to 50 per cent of available phosphoric acid.

The manufacturers of nitrogen products are also making decided progress in this field. In the development of the manufacture of so-called air nitrates a study is being made of the practicability of putting on the market materials like nitrate of ammonia, containing about 34 per cent of nitrogen, or of urea containing nearly 47 per cent of nitrogen. Among potash fertilizers muriate and sulfate of potash, both manufactured products, contain 50 per cent of actual potash. There is a further tendency to develop the manufacture of chemical salts containing two or even three plant-food constituents. Thus, a product known as Ammo Phos contains 10 to 11 per cent of nitrogen and 48 per cent of phosphoric acid. This is a salt easily soluble in water. It is possible that there may be developed in time single salts containing nitrogen, potash and phosphoric acid. It is pointed out that such products are likely to be more valuable than the less concentrated materials for two reasons. In the first place, such concentrated products are for the most part

easily soluble in water. This means a more ready and more uniform distribution in the soil. In the second place, these products, because of their greater concentration, will furnish in a much smaller bulk a large quantity of available plant-food. By way of example, it may be stated that a mixture made up of

350 lbs. Ammo Phos
200 lbs. nitrate of soda
200 lbs. muriate of potash

will contain in 750 pounds the equivalent of one ton of a 4-8-5 fertilizer, that is, one furnishing 4 per cent of ammonia, 8 per cent of phosphoric acid and 5 per cent of potash. Even a greater degree of concentration may be obtained by using nitrate of ammonia and muriate of potash of a greater degree of purity. Since the cost of a mixed fertilizer is determined, in large measure, by the cost of handling and transportation, the higher grade fertilizers are, everything being equal, more economical than the lower grade fertilizers. A mixture offering in 600 or 700 pounds the equivalent of one ton of what we now regard as a good fertilizer would require one-third of the number of bags, one-third of the amount

distribution of 300 or 400 pounds of fertilizer per acre. Hence, our fertilizer distributing machinery will have to be improved to provide for such uniform distribution. Our fertilizer drills will have to be further modified to allow the placing of the fertilizer at some distance from the seed in order that the latter may be located at some distance from the strong solution of salts. In this manner the seed and the young plants would be protected from injury for a time long enough to allow the chemicals to be gradually diffused in the soil and to become changed in it so that they may no longer cause a so-called burning effect. It is safe to predict that within the next five or six years there will be very marked progress made both in the manufacture and use of the more concentrated and available forms of plant-food. This is bound to mean more efficient and more economical methods of crop production.—J. G. Lipman.

A COLONY HOG HOUSE

This 6 by 8-foot colony house has proved its value where it has been used. It is a gable-roof house with the roof doors on one side to be opened for sunlight. Build the plank floor first. Timbers 4 inches square for the outside make excellent runners and a 2 by 4 in the center stiffens the frame.

Next comes the framing work, which is made of 2 by 4-inch lumber. This is placed on top of the plank floor. The outside studdings are 24 feet high and are placed at equal distances, or about 2 feet 4 inches apart. On the north slope or opposite the slope where the doors or windows are to be placed, there should be a wind brace between the rafters so as to keep the house rigid at all times. The siding material used is a 10-inch dressed shiplap. This material can be used for the doors, roof and siding and will result in a good, tight and warm building that will be free from drafts.

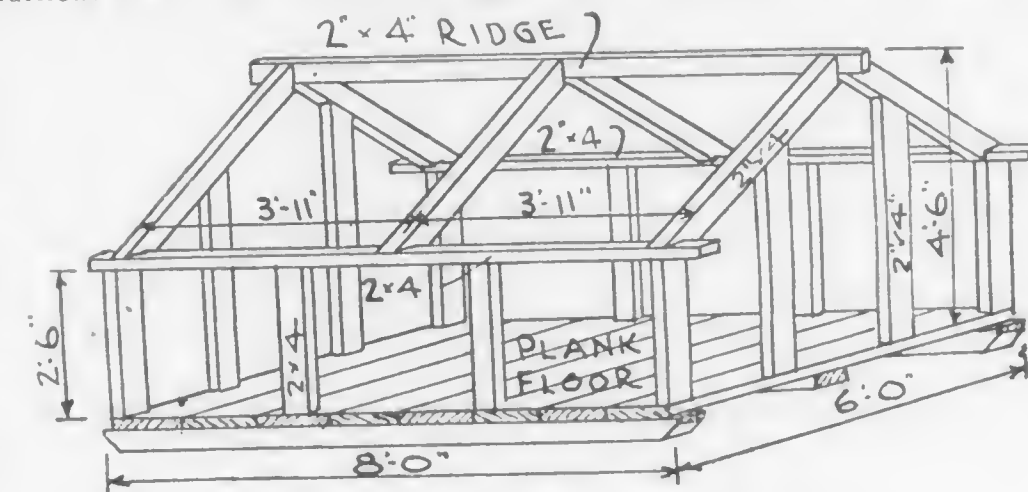
The roof doors, which are on the east or south, of the house are hinged at top or side and each door is 3 by 4 feet in size. Extra heavy 8-inch strap hinges are used. The entrance door may be placed in the middle of the gable end, or near one corner of the end or side. The side or end, is the best because the swine are better protected from drafts. The size of doorway is 24 by 30 inches, but may be made larger, and higher by building the sides higher, say 6 inches or so. Some of the large breeds demand higher doorways than specified.

In cold weather a piece of burlap or ducking hung at the top of the door, with a stick a little shorter than the width of the door nailed across the bottom to prevent the wind from blowing it back, will help to keep the pigs warm. The pigs will soon learn to hit the curtain when they want to go thru. The board doors would not then need to be closed except in very bad weather, or while the pigs are very small.

Pig fenders to protect the young pigs at farrowing time are easily built by fastening 2 by 4 pieces flatwise to the sides and ends about 6 inches from the floor. They should be removable.

A satisfactory method of ventilation is provided by leaving an opening or moderate size through the ridge pole, protected by nailing a thin triangular board under and flush with the edge of the extending roof boards. The wind is protected by this arrangement from sweeping down the house.

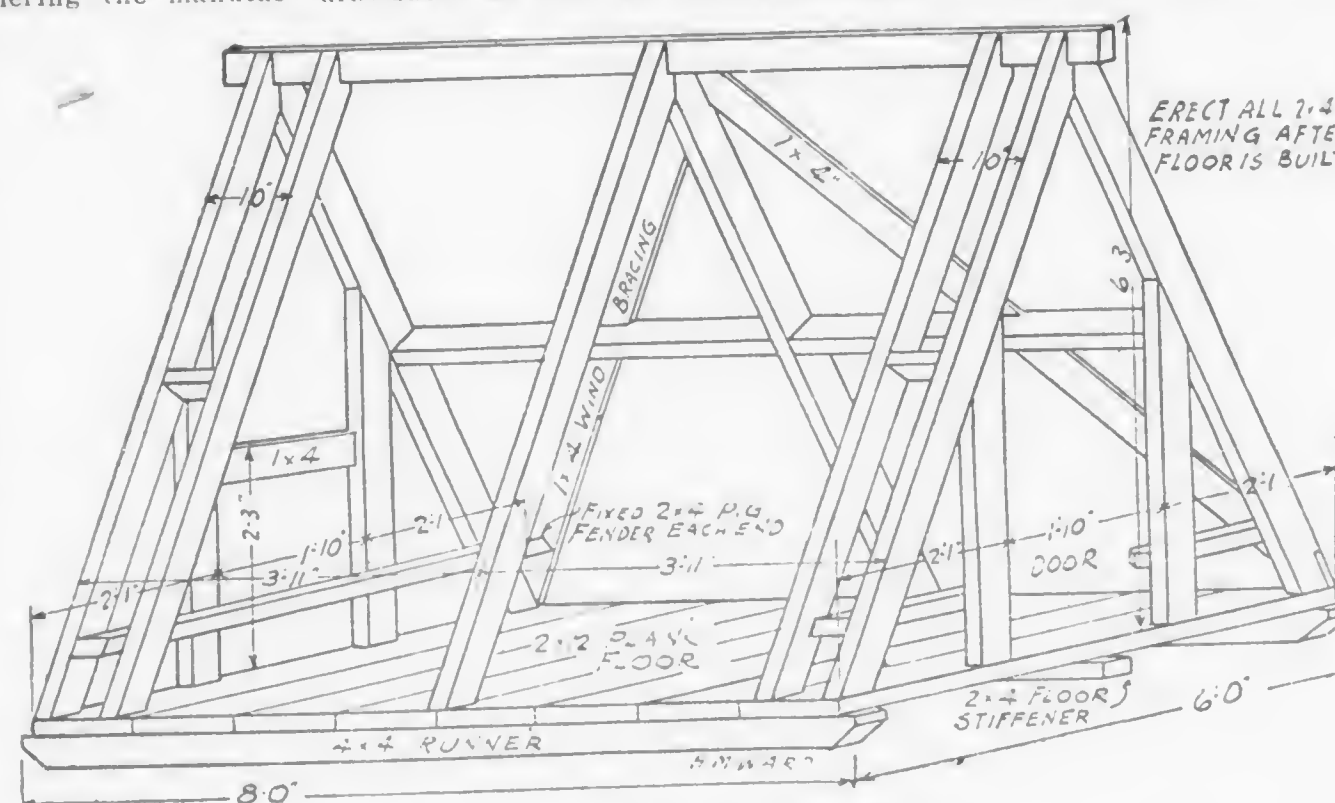
This kind of house needs two coats of paint. It will thus last longer and look better and will prove to be a good investment if cared for properly. An occasional spraying of the inside walls acts as a preservative.—Harley M. Ward.



Plan of Hog House Built on Runners

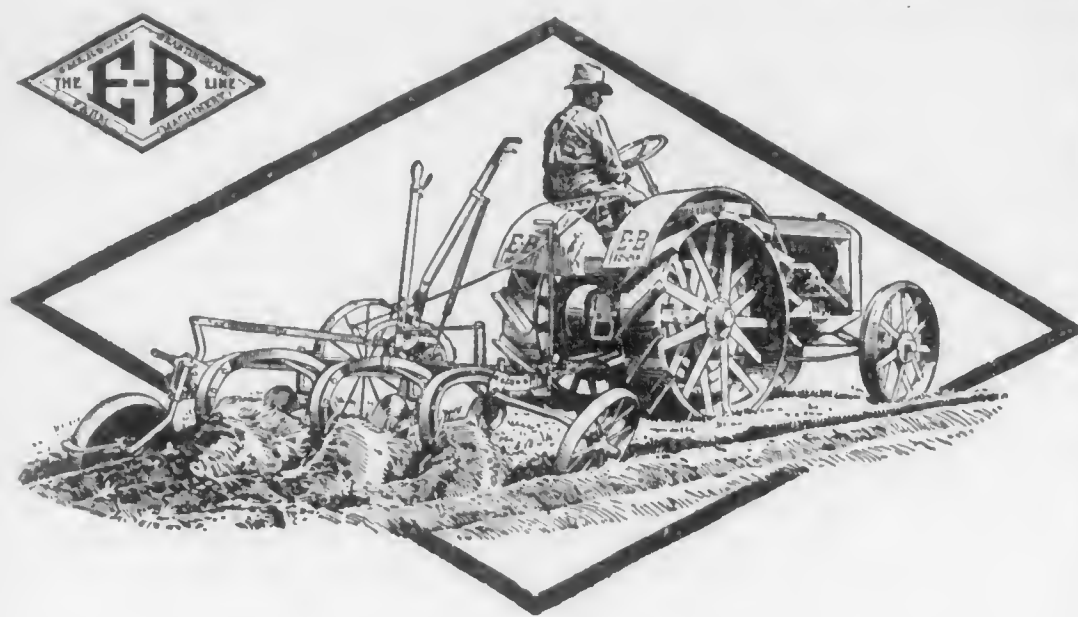
of labor needed for the filling of bags, one-third the cost of handling and transportation. Less storage space and fewer cars will be needed for storing and transporting such materials.

From the farmer's point of view, such concentrated and available fertilizers would also possess a distinct advantage. He would also save much labor and time in hauling the fertilizer from his freight station to his shed. He would save labor in the handling, and carting the material to his field. By drilling or broadcasting 100 pounds of a very concentrated fertilizer, he can accomplish the same results as he can now with 300 or 400 pounds of the less concentrated but relatively high-grade fertilizer of the present day. However, the more concentrated and more readily available fertilizers have their drawbacks as well as their advantages. It is



Plan for an "A" Colony Hog House

well known that as a fertilizer dissolves in the soil moisture a strong solution of chemicals is produced. If proper care is not exercised in the distribution of the material, a very strong solution is formed in the soil and this may retard or entirely prevent the germination of the seed. It may also injure the roots of the young plants. As a farmer would put it, the fertilizer may "burn" the crop. It is quite apparent, also, that the uniform distribution of 100 pounds of fertilizer per acre is more difficult than the uniform



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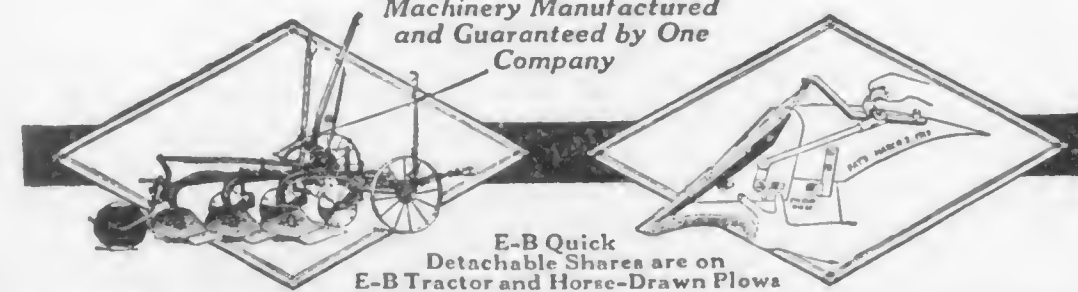
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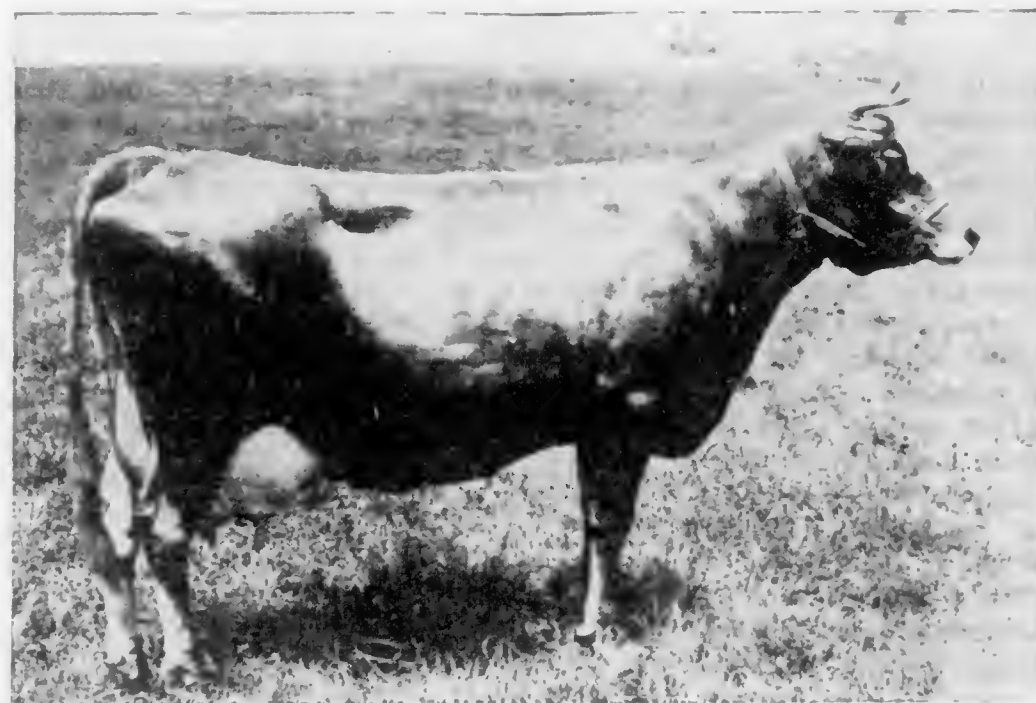
FALSE ECONOMY

The stock-keeper who would save on his feed bill is quite likely to cheat himself. When we consider that the value of an animal is largely determined by its ability to handle large quantities of feed, turning them into a higher priced commodity, we can understand why the above statement is true. I am inclined to believe that ninety per cent of unprofitable production in the dairy is caused by the lack of proper feeding. Farmers are confronted this year with the problem of what is best to do with their large crops of grain and forage. Especially is this true of corn, which is undoubtedly the largest crop we have ever grown. We find the market not only falling, but with a poor chance for improvement. Why not feed some of this good corn to dairy cows?

In reviewing some of the bulletins issued at the Nebraska Experiment Station, I find a record of a herd for a series of years, together with figures determining the cost of butterfat production. Using the prices given at that time for both feed and butterfat, and transferring them to conditions such as we have now, I find that with such a herd, corn can be made to produce \$2.40 a bushel when fed to good dairy cows. This is basing

then of feeding to cows, which are no better than ours if as good, and then have the product of his cows made into butter and sold on our New York and Chicago markets in competition with ours, it simply means that we are not making the best use of what we grow on our farms, or else that we are not willing to pay the price of profitable production. This very day Danish butter is being sold in New York and Chicago in competition with our product. By cutting out this false economy in depriving the good dairy cows of proper feed, we can drive every competitor out of our market in three months; and, more than that, we would be able to sell butter in any foreign country and at a profit. We are in a position to produce butter in this country with the greatest economy.

Returning again to the subject of giving the cows plenty of feed; the average dairy cow consumes about fifteen pounds of feed per day of what we call maintenance ration—that is, the food required to keep the cow alive, warm and to replace waste. We might say it is the board bill of the cow. Now if the cow can consume thirty pounds of feed, then we are interested in the fifteen pounds which is not used for maintenance



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the butterfat at fifty cents a pound, but rather for production. If the it would indeed be a fine thing if we could market our corn for \$2.40, and that is just what can be done if we have good milking cows and give them good care. This does not call for a high grain ration, but just for an average ration of from four to twelve pounds of ground corn a day, with plenty of alfalfa hay and some corn silage and a little oil meal.

We are now confronted with conditions very different from those of the war period, and we must adapt ourselves to the change. It is false economy to figure that corn or grain is wasted when fed to good producing animals. The fact is that the chief use of corn and other grain should be on the farm where it is grown, and where it can be turned into a high priced finished product. If the Danish farmer can buy our oil meal, corn and other grain, pay the freight to the seaboard and the high priced shipping charges, pay the costs of distributing to farmers and

per bushel thru a good dairy cow—and I have every reason to believe that it can be—basing the figures on six years work by a herd of cows in Nebraska—then certainly it seems to me that is not wasted corn when it is fed to dairy cows. Another viewpoint: would it not be wise to market more of our corn by feeding it on the farm and retaining the valuable product of fertilizer, thus equalizing farm labor and altogether making a more economic and dependable line of production?—A. L. Haecker.

ANNUAL MEETING NATIONAL DAIRY COUNCIL

The annual meeting of the National Dairy Council was held in Chicago December 2, 1920, at which time a very large representation of all branches of the dairy industry was in attendance. A very excellent program was given and much enthusiasm created for the development of the National and State Dairy Council work.

In addition to the comprehensive report of the president, Mr. Walter J. Sears, president of the National Canners' Association, gave a most excellent address on the value of co-operative publicity, outlining the wonderful results which have been achieved by various other industries which have resorted to co-operative publicity, and outlining to some extent the comprehensive work which is now being conducted by the National Canners' Association of America.

An address was also given by Mr. H. C. Campbell, in charge of educational work, Portland Cement Association. Mr. Campbell outlined in a very interesting manner the advantages of co-operation within all industries. He stated that it mattered not whether the industry handled a food product or some other commodity, that it was a proven fact that co-operative publicity was very necessary to the success of that industry.

Hon. Frank O. Lowden, Governor of Illinois, was also in attendance and gave a very inspiring talk, emphasizing the importance of co-operation and getting together at this critical time in the world's history. Governor Lowden stated that the dairymen must unite and so tell their story as to let the public know the fact regarding dairy products, because of the importance of these vital foods to human and national welfare.

HERD BULL NEEDS GOOD CARE

Cost must not play the important part in caring for the herd bull, which needs as much attention as does the milking herd. When six months old the bull calf should be separated from the heifer calves and fed a ration that will keep him growing rapidly. At this age from four to eight pounds of grain daily, depending on his size, is the amount recommended by dairy specialists of the State Agricultural College.

Most dairymen prefer to feed bulls the same grain ration that is fed to the other growing stock. But in addition, good leguminous roughage is necessary, the amount depending on the size of the animal. Mature bulls will often consume 15 pounds of hay daily. Silage may be fed to the growing bull in small amounts, and up to 15 pounds to a mature animal.

A common grain ration for the mature bull after complete growth is:

- 3 parts corn meal,
- 3 parts ground oats,
- 3 parts wheat bran,
- 1 part linseed meal.

Along with this ration should be fed leguminous roughage and some corn fodder or stover. To keep the bull in excellent condition, but not fat, exercise is a factor that must not be forgotten. If the bull cannot have access to a yard at all times, he should at least be tied outdoors each day and allowed to go back and forth on a cable.—N. Y. State College of Agriculture.



From feed store to bank

What really counts in feeding is how much of the milk check gets into the bank to help increase the balance. That is largely determined by how much of the daily ration is digested and utilized by the cow. Some of the milk check must pay for feed, but how much goes to the feed bill and how much to the bank depends on the kind of feed and how well it forms a balanced ration with the roughage used.

Roughage grown on the farm is one of the best sources of profit in dairying, for its digestible nutrients are worth pound for pound as much as those contained in the grain feed that is purchased. But to make the food elements in the roughage available, it is necessary to use concentrates which will combine with them to form a balanced ration, and as roughage varies in nutritive content, it is necessary to provide different concentrates to be fed with different kinds of roughage.

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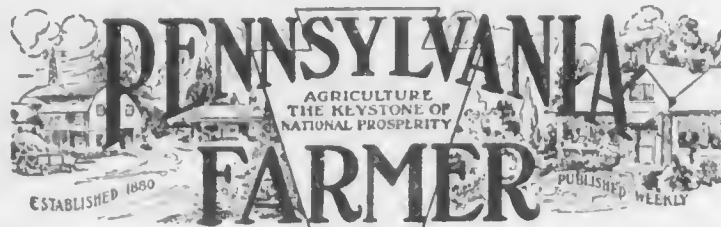
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PHILADELPHIA, PA., JANUARY 8, 1921
VOLUME 49 NUMBER 2

OUR JOB is to serve our readers. Whenever you are puzzled, write to us and we will help you if we can.
—The Editors.

There Are Slaves Who Dare Not be in the Right with Two or Three—Lowell.

Welcome Suggestions

THE RESPONSE by our readers to the invitation published a few weeks ago to send us suggestions, comments and criticisms has been most gratifying. We have received a great number of letters, every one of which is highly appreciated and will be given most careful consideration upon second reading. While we are glad to read the nice things said about Pennsylvania Farmer, we are equally glad for the suggestions of what our readers would like to see added or changed. We have been interested to note that we have previously planned for practically every helpful improvement suggested but owing to the limitations set by war-time conditions we have not been able to add them. However, we shall do our best to make every improvement possible as fast as we can. Our readers are kindly requested to continue this practice of writing us their opinions and suggestions.

Without attempting a resume of the letters received, this is a good place to mention one request that is almost unanimous: "Print more County Notes." This is just what we should like to do if we can get them. We would like to have a correspondent or two in every county in our territory who would send us a brief note about general conditions, weather, crops, prices, etc., in their county at least once a month. We shall be glad to send paper and stamped return envelopes to those who tell us on a postal card that they will do this. By co-operating with us in this way you can help us to make our paper still better.

Only one writer out of the many suggested that we could use the page devoted to "Passing Events in Pictures" to better advantage. The majority commented favorably on this feature. We hope to profit by the good suggestions made by our readers just as fast and as far as it is practicable to do so.

Repeat The Brooks Law

GOVERNOR SPROUL and ex-Attorney General Shaffer have expressed themselves as being in favor of repealing the Brook's Liquor License Law and the enactment of an enforcement act which would be in harmony with the Volstead Act. The presence of the Brook's Law on the statute books has been interpreted as being in force in spite of the national law and hence many license judges are still granting licenses. Write the Governor and your representatives in

Pennsylvania Farmer

the Legislature to vote for a repeal of the Brook's Law and in favor of an enforcement law with teeth in it.

Courage The One Needed

THE FOLLOWING condensed reprint of a recent editorial in the North American so well sums up the business conditions of today and is so closely in line with our own ideas that we gladly pass it along:

According to all competent authorities, the violence of the fall in commodity and security prices in this country during the last few months has been unprecedented. The declines have been more precipitous than ever before recorded in our history, and greater than in any other important commercial country in the world. On December 1, the index numbers of prices were at their lowest in four years; within six months 60 per cent, it is estimated, of the price advances made during the last six years has been canceled. If such losses had fallen upon business in any other nation, expert declare, they would have resulted in commercial paralysis, serious conditions of unemployment and widespread suffering.

A few general statements will indicate the magnitude of the shrinkage, expressed in dollars. Agricultural products, it is estimated, have shrunk in market value \$5,000,000,000. In merchandise there was a month ago an aggregate recession of \$3,000,000,000, and probably there has been a further drop of \$1,000,000,000 since then. Quotations for securities including the soundest and best paying show losses of many billions more.

One's first thought will be that such staggering figures must be reflected in business stagnation, if not disorder; yet no such evidences are to be found. In looking for the effects one turns first to the record of business failures. Of these there were week before last 337, and in the week previous 296. These totals are nearly three times as high as during the abnormal prosperity of the war period; but in the years immediately preceding the war the weekly average was about 300, so that there has been no threatening rise. Furthermore, the number of business enterprises increased enormously during the last six years, hence the percentage of failures is really small.

If conditions were bad the savings banks deposit would show a decline, but they are swelling. When a situation of panic is imminent money becomes plentiful at low rates, because there is no business expansion to demand new capital; but money rates today are high, and the banks report a tremendous demand for funds to be invested in production. While bank clearances show a decline, it is not relatively as great as that in commodity prices, so that the volume of business is steady. In reserves the banks are exceptionally strong. Railroad earnings provide one business barometer; railroad business has recovered from the high war level just far enough to relieve congestion and enable the lines to handle their enormous traffic expeditiously. Moreover, the railroads have passed thru their most critical period, and are in a stronger position than at any other time during the last twenty years.

But the most direct evidences of what the business situation is are to be found in the retail field. Taking a dozen of the principal cities, all except two showed in October a decided increase in retail sales over the same month last year. New York's increase was 6.23 per cent; Philadelphia's, 15.8; Chicago's, 6.8; San Francisco's, 8.2, with an average of 9.8. Comparing the four months, July-October, inclusive, for the two years, retail trade in these cities increased an average of 15.5 per cent. Experts say there is every reason to believe that the Christmas trade this year will equal the unprecedented volume reached in 1919.

The facts and conditions we have cited are basic indices of the economic situation. They are admittedly determining factors in the situation, and could not exist if the foundations of business were not sound.

Yet the continuance of business and industrial prosperity does not depend upon economic factors alone; however favorable they may be, they can be overcome by other influences. It has long been recognized by the ablest writers upon financial and commercial matters that there is a psychological force which perceptibly and often

emphatically affects the currents of business.

The word psychology, once restricted to the use of scientists and scholars, has acquired a well understood popular significance as a result of the world conflict, during which war was waged by the producing of psychological effects. Next to her army and her submarines, Germany's most potent war mechanism was her world-wide system of scientific propaganda, wherewith she spread in the countries of her adversaries influences promoting discouragement, discontent and disunion, together with a belief in her invincibility. It was not her armies that defeated Russia, but the deadly psychological effects of propaganda by her agents. It was by this method that she brought Italy to the verge of disaster and created not a little trouble even in this country * * *

Business is just as susceptible to psychological influences as is the public mind of a nation; or rather it is infinitely more susceptible, for far-reaching effects can be produced without organized effort and even without conscious intent. Fear and faith are factors as influential in undermining or upbuilding prosperity as are varying conditions in respect to credits, wages, employment or consumption demand for goods. It is easily possible for prosperity to be wrecked because of fear or loss of confidence at a time when fundamental economic conditions are strongly favorable.

That is the situation that prevails today. Every indication, as we have shown, testifies to stability and sound growth. The only menace comes from the psychological influence of calamity-howling, from the goggle-eyed talk of rumor-mongers and the malignant or merely witless whisperings of mythical business troubles * * *

Our Washington Letter

The United States Warehouse act is the best law that has been enacted for the farmers, the warehousemen and the bankers, in a long time, and its beneficial results are obtained without injuring anyone, said H. K. Holman, investigator in warehousing in the Department of Agriculture, in an interview. At this time when the attention of the people is directed to better marketing and financing problems of the farmer, it is the belief of Mr. Holman that much publicity should be given to the act and its provisions.

The Federal Warehouse act became effective in 1916 and was amended to meet the market requirements and extend its usefulness in 1919. During the war little progress was made in developing the system provided for by the Warehouse act, beyond the building up of machinery to enforce it and prepare regulations and forms to be used.

The United States Warehouse act provides for the licensing of warehouses under bond in which are stored such agricultural products as cotton, wool, grains, tobacco and flaxseed. In securing a license each warehouseman agrees to comply with and abide by all the provisions of the act. The issuing of licenses is done under the authority of the Secretary of Agriculture and the enforcement of the law comes under his department. Each warehouseman is compelled when applying for a license to give sufficient bond to the United States to secure faithful performance of his obligations as a warehouseman, and the bond shall contain such terms as are prescribed by the Secretary of Agriculture. Any person injured by the breach of any obligation under the act shall be entitled to sue on the bond in his own name in any court.

It is the belief of government experts who have given much study and time to the development of the bonded warehouse system that it should be given more attention and publicity by the agricultural press and the farm organizations. It is evidently a movement in the right direction, which may be the beginning of a great nationwide system of bonded warehouses for the storage of farm products, and the basis for a safe, efficient system of credits for producers.

Representatives of the American Farm Bureau Federation appears before the Senate Committee on Agriculture and Banking in a joint hearing and presented their plans for relieving the present marketing situation and providing for the necessary financing of the producers.

President J. R. Howard of the federation, called the senators' attention to the effects of the recent increase in railway freight rates upon the farmers. Farmers, he said, get the world market price less the transportation expenses, the price in Liverpool minus the cost of getting the wheat to Liverpool. The cost of getting a bushel of wheat from Omaha to Chicago used to be 12 cents. A margin of 21 to 23 cents a bushel is now asked for this service, the extra cost being freight charges. This makes the farmers' price ten cents a bushel less than formerly. Mr. How-

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and asserted that the farmers cannot stand another advance in rail rates.

The Farm Bureau Federation favors an extension of credit to all nations, according to Mr. Howard. It has never advocated direct loans from the United States Treasury to foreign countries. The federation's plan provides for extension of credit, by using such security as foreign countries might be able to give for the purchase of farm products, such securities to be deposited with the American Corporation and sold to American investors or debentures issued upon them. The War Finance Corporation would become a clearing house between foreign nations and the United States in the extension of foreign credit and markets.

In regard to security from Germany, Mr. Howard suggested that with the consent of the Reparations Commission, the American credit could be made a first lien on all the property and income of that country. * * *

Speaking of the proposed emergency tariff, the speaker said "we demand the same protection for the farmers that industry has." As regards the storage of farm crops, Mr. Howard said the key on which the credit system is to be worked out is the warehouse certificate plan. * * *

After a debate of several hours in the Senate on the Fordney emergency farmers' relief tariff bill, passed by the House, it was referred to the Senate Finance Committee, where attempts will be made to have several commodities included in the bill, which were left out by the House. Secretary A. M. Loomis of the National Dairy Union, has been requested by members of his own and other organizations to see that a tariff on dairy products is placed in the bill. He is making a strong effort to get a hearing before the committee on this matter. Senator McCumber announces that "a fair and adequate consideration" of the bill will be had, and it is reasonable to expect that the dairy industry will have an opportunity to be heard by the committee. There will also be a strong effort to have frozen and refrigerated meats included in the measure. The chances of the bill becoming a law under the present administration are far from favorable.—Elmer E. Reynolds.

HARRISBURG LETTER

Legislative Harmony.—It has been a long time since men having different ideas about the management of the dominant party in Pennsylvania politics have gotten together with such unanimity on organization of a legislature after having been upon the verge of a contest for control which would have stirred up the whole state. The organization of the general assembly this year not only presents a singular example of one man leadership, but also of how Keystone State political history repeats itself. Some ambitious plans formed after the close of the last session have been given up and in the face of an extended legislative program, a date for early adjournment has been set. It seems to be the general idea among men in high places in the Republican state organization that the general assembly should do its work quickly, pass comprehensive legislation on important subjects, levy no new taxes and give the party no more to explain or defend than necessary.

The Financial Side.—From all accounts there will be no tax imposed on capital engaged in manufacturing or on coal or any other natural resources. The position is taken that the people are paying enough and instead there will be a stiffening up of the collections under present laws. Auditor General Charles A. Snyder told the State Constitutional Revision Commission there was no need of new tax laws and that the revenue could be made ample to meet reasonable appropriations. There is a disposition to take him at his word and to keep the appropriations within the estimate. Incidentally, this situation will permit of some practical working more closely resembling a budget than ever before. The Legislature will be given a limit on appropriations and the chairmen of the

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appropriations committees will take up with the Governor various bills for credits and other objects.

Agricultural Bills Early.—Secretary of Agriculture Fred Rasmussen will send in his agricultural bills early. He will endeavor to secure the aid of counties in agricultural statistics by a bill providing for ascertaining of certain facts when the triennial assessment is taken. There will also be some amending up of various inspection bills and better allowances for the work of various bureaus, especially for control of seeds and animal diseases.

Oleo Pays the State.—The value of oleomargarine licenses to the state is shown by the fact that the revenue from this source for 1920 was almost \$630,000 and that the 1921 applications start off at a rate which indicates a still greater revenue this year. The number of retail licenses issued went over the 6000 mark for the first time, being a jump of about 500. The retail licenses comprise most of those issued. The usual drive to take off the license can be looked for, but it will not get very far.

The Constitutional Convention.—While the State Administration is disposed to insist upon a constitutional convention so that the results of the year's study may not be lost chances are there will be stiff opposition to any such proposition in both branches of the Legislature. An effort is to be made to prevent any such question going to the people and unless the State Administration takes a very firm stand the bill may go the way of similar measures in years gone by.

As to Consolidation.—Most of the speakers at the recent educational meetings appear to regard as a foregone conclusion that consolidation of schools was going to be general in the state once the cost of construction is stabilized. However, there remain to be voted upon over a score of such projects. According to what Dr. L. L. Driver, chief of the rural education end, said, over 600 one-room schools have had to be closed in the state lately, 534 of them because of lack of attendance. Rural districts have been the greatest sufferers, just as they have from lack of teachers.—Hamilton, Harrisburg.

NEW YORK LETTER

Farm Interests Consolidate.—Consolidation of agricultural interests of the state was effected last week when 33 farm and traffic organizations sent representatives to Syracuse. There is great need of some body deemed capable of speaking for farmers at all times with authority, and with power to take action to obtain the needs of farmers. Bankers and consumers were also represented and together all will work out a definite farm policy. The committees appointed will report at Albany in January.

Crop Insurance.—A new idea is that of crop insurance, now being promoted in Genesee and other counties. A few farmers will give a trial to the plan of insuring a yield equal to 50 per cent, the average yields on the farm involved, for the past three years.

Pooling Plan Proceeds.—Tompkins county is pushing the pooling of milk sales and now has 590 signers. State leaders in agriculture are urging the adoption of the plan at once. The number of leaders or workers to present the plan to the dairymen is limited, and this handicaps its growth somewhat.

New Price Proposal on Milk.—When the Milk Conference Board refused to pay the January price of milk asked by the Dairymen's League, \$3.15 per cwt. of three per cent milk, the same price paid in December, the new head of the League, G. W. Slo-cum, announced that a drop of 10c below this price would be accepted if the dealers would drop the retail price a cent a quart in January. This would be making a reduction of 3 cent a quart for the dealers, as compared to the drop of 1 cent made by the dairymen in December and January while the consumers would benefit to the extent of two cents a quart. This is putting the dealers into a situation unequalled for concessions, as it has been for years the practice of dealers to raise the retail price a

whole cent whenever farmers raised it a half cent, or two cents when the wholesale price lifted a cent. Never have they made a real sacrifice such as the League now demands of them, and such as ordinary decency demands at a time when everyone is making very real price concessions. The public awaits the result with interest.

NEW JERSEY NEWS

1921 Legislature.—The 145th Legislature of New Jersey will convene here on Tuesday, Jan. 11, and if Majority Leader of the House T. Harry Rowland, of Camden, and other leaders in the Republican majority of both Senate and Assembly have their way, the session will consume only about eight or ten weeks, or, in other words, will close about the middle of March. Many important problems confront the incoming lawmakers. The Republican majority will get busy and enact only necessary legislation pertinent to the vital interests of the State. Among the matters that will come up early in the session of much concern to agriculturists of

New Jersey are bills providing for the payment of interest and taking care of the sinking fund for the proposed Delaware River bridge between Camden and Philadelphia and the Hudson Tunnel between Jersey City and New York, which will be of tremendous value to produce growers and farmers owning automobiles.

Medals Are Ready.—The thousands of farmers' sons in this state who entered the world war and accomplished deeds of service of many kinds are urged by Governor Edwards to make application for what are known as Victory Medals. The Governor has requested the press to inform the veterans of the great conflict to immediately become possessors of the insignia. The Executive has pointed out that applications may be made at any recruiting station, either of the army, navy or marine corps, or thru the nearest post of the American Legion. The Governor states that the men are not only earnestly requested to make application at once as a part of their duty to assist the War Department in the proper distribution of the medals but also as a matter of right and justice to themselves.—Kelly, Trenton.



Feed your crops a "balanced ration"

Increasing the yield of a crop by the use of properly "balanced" fertilizers is as natural and practical as increasing the weight of hogs and cattle or the quantity of milk from cows by means of "balanced" feeds.

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Why not put your farming on an efficiency basis? Get all the profit. Write to our Agricultural Service Bureau as to the proper fertilizers for your soils and crops. This service is free to you—as a help toward bigger yields, larger income, greater happiness. Also ask us to send you our useful booklet "How to Get the Most out of Fertilizers". No charge.

If there isn't an A A C agent near you, write for the agency yourself.

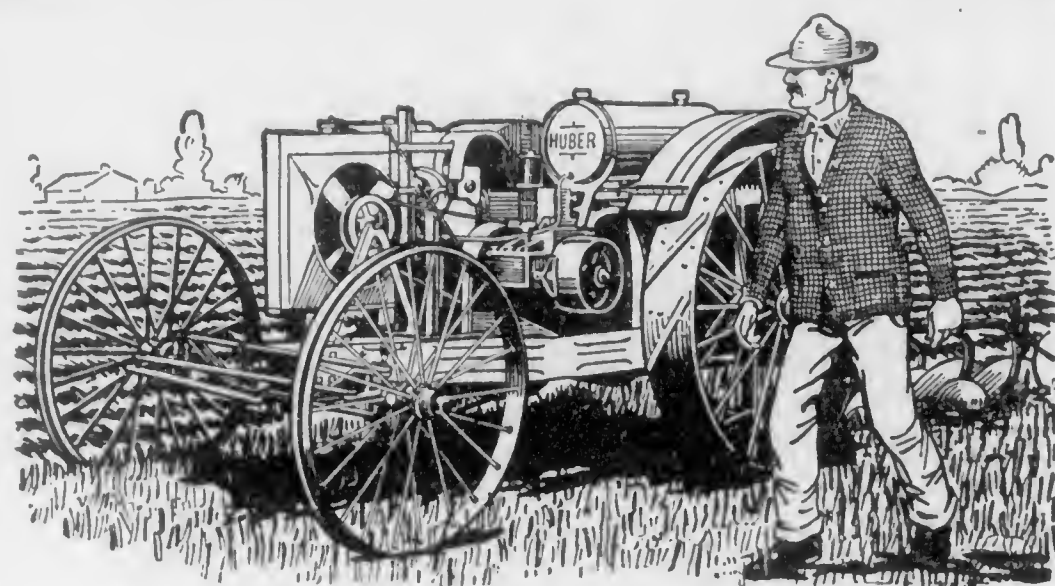
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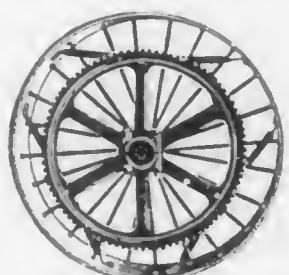
FERTILIZERS



MAKES YOUR WORK GO THREE TIMES AS FAR!

ONE of the big problems of the farmer is to get his work done in something like the hours that the city man works, so he can hold his sons on the farm and keep the men he hires.

THE HUBER LIGHT FOUR cuts the labor of plowing and preparing the seed bed, and of harvesting to one-third of what it used to be and that means more leisure. It means bigger crops because the work can be done on the few choice days when the ground is just right. The LIGHT FOUR uses heavier tools and does the work more thoroughly. It is self-steering in the furrow.



The Huber Drive Wheel. Note how power is transmitted direct from the bull gear to the rim of the drive wheel of the Huber Light Four. The spokes carry weight only. They transmit no power. That means long life and perfect service. The wheels are especially high and wide of face for work on soft or uneven ground. This is only one of the many points of Huber Superiority.

But those tractor advantages are real advantages only when you can count on them with the same certainty that you used to count on the work of your horses. Thousands of power farmers have known the HUBER for years as the tractor "that always keeps going." Every part of the HUBER is as strong as every other part. And they all have been tested and tried by 20 years of tractor building experience. Every tractor is backed by a Nation-wide system of service branches.

THE HUBER LIGHT FOUR does all belt work on the farms efficiently and quickly, even to driving a light thrasher. Write for booklet—"The Foundation of Tractor Dependability."

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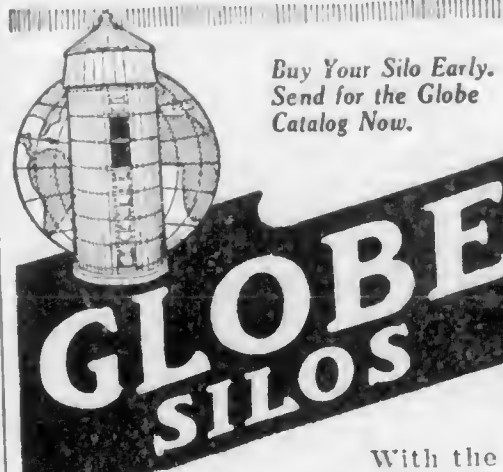
Cost of Production

has Come Down

With prices at new low levels, it is even more important than when the "Sky was the limit" to watch cost of production and equip yourself to meet competition. You cannot produce Milk or Beef in competition with the farmer who has a silo unless you are equipped as he is.

Tectonius and Darby Silos are genuine cost production savers.

Start cutting cost by taking advantage of our JANUARY DISCOUNTS which we guarantee are as large as will be made during 1921. Write at once for illustrated catalog, prices and discounts.



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With the Globe Silo the extension roof idea was introduced. Today it is the only extension roof with side walls so nearly straight that silage settles level—no heaped up silage exposed to the air.

Learn now the other exclusive Globe features, the special early order discounts and low live agents can obtain open, profitable territory. Send for Globe Catalog.

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TALKS WITH THE BOYS

Blessings on thee! Little man—
Barefoot boy with cheeks of tan;
Why thy turned-up pantaloons
And thy merry whistled tunes;
With thy red lips—redder still;
Kissed by strawberries on the hill;
With the sunshine on thy face,
Thru thy torn brim's jaunty grace;
From my heart I give thee joy—
Blessings on thee, barefoot boy!

Introductory Letter

To the Boys:
It does not seem long since I was a boy on the farm. Yet measured by years the number is greater than I like to think. Altho times have changed a great deal in those years, I do not believe that boys have changed very much. I suspect that you are having pretty much the same joys and troubles, the same successes and disappointments that I and all other men had while boys. No doubt you are planning what you will do when you become men. It may be that some of you are saying that you will not—no, never—he farmers, while others feel sure that is the life for them. Well, we will not argue that point now. I know that there are lots and lots of things that it will do us good to talk over whether you become farmers, lawyers, doctors or barbers. So we will mark off a space here and put up this sign:

CAUTION NOTICE:
This Space is Reserved for the Boys and the Editor

I remember that in my boyhood farm home newspapers were scarce and this was the case in nearly all farm homes. There was the county paper, which did not interest me very much, and the Blade, a paper of national circulation devoted to general subjects and short stories. Besides the story which mother read aloud every week, there was a department called "Our Young Folks." In it letters from boys all over the country were printed, and it is this feature that I remember most distinctly thru all the years. Those letters were most interesting and the kind, helpful advice which the editor printed each week was most encouraging and interesting to me.

In this connection I wish to relate a little personal incident. As I remember it, I was about 12 years old when Ambition took the first good, hard crack at me. Our county paper published, one week, an advertisement for a country boy to help around the printing office and learn the trade—in other words a "printer's devil." My eye fell on this and I forthwith determined that the job was for me. The fact that a sister and I were the only children left out of a family of five (three having recently died from diphtheria) did not deter me from setting my heart on leaving father, mother and sister alone on the farm while I should go to town to work, six miles away. Youth is often thoughtless and selfish. It does not really mean to be, but when it sets its heart on a thing, that is the only thing worth while—or so it seems at the time.

Well, father put his foot down on my scheme and smashed it. Mother sided with him. Sister sympathized with me but could not help me any, and I tearfully concluded that I was a badly used boy. Did you ever feel

that way when you could not do what you wished?

I poured my sorrowful tale into a letter and sent it to the editor of the boys' department of the Blade. That sensible man gave me some plain, straight talk, but did it so nicely that I felt more kindly towards father and mother and very soon realized that their advice was for my own good, as it always was.

Now, boys, I propose to set aside this corner just for you and me. Older folks and girls shall not put a foot into our den. They may have their own, but here you and I are going to meet weekly and talk over things that puzzle us, and tell about things we do or would like to do, and advise each other about things we would like to know.

Of course, the success of the department will depend upon whether you write me or not. You need not fear to tell me anything that is on your minds, as I know how to keep secrets. I was a teacher for a good many years and nothing gives me greater pleasure than to remember the close companionships I formed with boys. Just write your thoughts and mail the letter to Editor, Pennsylvania Farmer, 261 S. Third St., Philadelphia, Pa.

I feel sure that we can soon develop a department that will be valuable to all of us. We will not limit the field of discussion. Before we are thru we will likely be discussing education, amusements, farming, religion, politics, business—oh, well, there is no limit. Boys, "are you on?"

*Sincerely,
The Editor*

FIGHT BETWEEN TWO MOUNTAIN RAMS

"The mating season of the mountain sheep is in November and December, but prior to the opening of this season the old rams that have lived so peaceably together during the summer begin to spar and fight among themselves," writes Charles L. Smith in an article on "The Rocky Mountain Sheep" in the November issue of Boys' Life. Their battles, however, are of short duration and are more in the spirit of fun than otherwise, but as the season advances they become more frequent and severe. Each ram seems to know that if he is to stand any show with the herd, he must prepare in advance the muscles of his neck and shoulders and the cushion on the back of his skull, just back of the horns, in order to stand the mighty shock of some future adversary.

"I lay all one day in a cave in the rocks in the mountains of British Columbia and watched a fight between two of these old mountain monarchs. I saw them strike hundreds of blows, any one of which seemed to me was sufficient to break the neck of his adversary. The mountain sheep's instinct for developing the muscles for offensive and defensive warfare, is such that if it has not a companion who is willing to stage a sham battle for this purpose it will deliberately back up and charge a tree. Many of these trees can be found near timber line in the sheep country. The marks resemble two blazes with a strip of green bark between. These trees are struck with sufficient force to beat the bark off down to the wood.

PASSING EVENTS IN PICTURES



- 1—No One Could Resist the Smile of Little Howson Hartley, of Brooklyn, N. Y.
- 2—"The Shepherds of Bethlehem," from an old painting.
- 3—Little Miss Dolly Dupuy, in Her Latest French Costume.
- 4—Robert Murray, aged 12 years, of Tacoma, Washington, is said to Sing a Higher Note Than an Opera Star.

5—The Seaplane F-B-11, flying between Tampa, Fla., and Havana, Cuba. The inside is fitted up like a \$10,000 limousine. Photo was taken while 1,000 feet above water.

6—Two Pretty Misses showing a "Tom Tinker" doll made of wooden balls and "John Jingle" made of cloth.

7—Jean Tolley, of New York, wearing Circular Cape of Velvet, trimmed with Grey Squirrel.

8—Vasa Phrihoda, Czech Violinist, who recently gave a Concert in New York.

9—A Dainty Dress of Apple Green Taffeta with Pleated Skirt and Novel Belt Decoration.

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Ideal, good as new; full size; weighs 4 to 5 lbs.

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My Musical Medicine Chest

OUR musical medicine is mainly for those who don't want to get sick; but we even have the kind of melodies to cure almost any malady one can find in the dictionary.

Most ailments come from a state of mind, when it is out of gear. Most ladies living in the same atmosphere, with the self-same things happening regularly year after year, get a little bored. They want entertainment. But they can't go running after the big city theatres. Anyway, why should they? That's not necessary at all.

But still, when the day is coming to a close, and the blank walls face you, what are you going to do? There's where most ailments start, right there and then.

So this very night, or the very first night you can try it, open up the musical medicine chest. Take out a phonograph record, or go to the piano, or just think of an old song. Take a goodly dose of music. Put yourself in the spirit of the idea.



Entrance to a Farm Homestead in Monmouth County

Forget everything else, and just float off on the wings of music.

Ah, I have met farmer folk who laughed when we talked such nonsense. But you ought to see them now! It would do your heart good to realize the complete enjoyment night after night they find in the musical medicine chest.

Why, if it's raining, they put on sunny music, such as "The Spring Song" of Mendelssohn, or "The Moonlight Sonata" of Beethoven or a Hungarian Dance of Brahms. And if it's a cold night, and everybody's shivering, they try "Rustles of Spring" of Sinding, and the "Pastoral" of Mozart. They've learned how to find the hidden meanings in the chords of music. For here is a secret—the big idea which makes music more important to you than you ever dreamed before.

When some chords sound they seem like messengers of tragic drama; when some notes sing they are like the voices of angelic heralds of hope; when some phrases are heard the blood flows faster, the heart leaps, the whole body feels imbued with the shock of new energy. If you can understand this next sentence, you know more about great music and its power than many musicians.

Just as food tastes well, but must perform its mission of nourishing, so the pleasantness of sound in music is only the first part of its value; the revitalizing, inspiring, improving, developing qualities are far more important.

While you're being entertained, good music does more for you. Like the spring sun, which wakens the vegetation, the music calls into being the impulses of your youth and your gayest memories. It acts like an electric battery in refurnishing your nervous system with energy.

When you are tired, just too tired to sleep, when your every nerve is tingling and you feel like crying out, if you might listen to the soft crooning of a cello or a violin in the beautiful "Swan" music of Saint-Saens, how the notes would soothe your brow and how your body would calm into a perfect quiet, devoid of all restless sensations. When you feel a melancholy creeping over you, how inspiring and arousing are the brilliant rhapsodies of Liszt, the mazurkas of Chopin, the operatic arias of Verdi.

In my medicine chest of music, I have a prescription of every kind for woman and man of every disposition, in every emergency and in every situation. For the holidays, there are musical compositions which fit ideally; Christmas and Easter have their perfect musical dress; birthdays and wedding anniversaries and little social gatherings, and the period after a mourning, and the period after a birth—when you know them, you can pick your music as you do your foods.

The man of the house will appreciate the wife who introduces the beauties and advantages of music to the farm; after he has once tasted of the invigorating influence of all the great masters of harmony, he will realize that prohibition has created a finer agency for the entertainment of all mankind, by the fact that it has drawn new attention to the harmless, beneficial habit of listening to good music.—Chas. D. Isaacson.

THE CHARM OF HOSPITALITY

Think of the homes you visit, and the homes where you casually call. Is not there something about many

of them that gives you a warm, comfortable feeling of being genuinely welcomed and wanted? What is that evanescent "something"? It is the cordial hospitality of the person on whom you are calling; or visiting.

And are there not other homes where the hostess has not learned the charm of hospitality? Where she accepts your visits in a good deal the same spirit as the grocer, the baker, the candle-stick maker?

Not that you expect any great celebration. Not that at all! But it does warm the cockles of your heart to see a large welcome, not on the doormat, but on the faces of your friends, and feel a good, hearty handshake and hear their urging you to come again, soon!

Everybody hates being taken for granted, I think. It usually takes time and effort getting ready to make a call. And it seems like a small thing, but it often means a sacrifice for the very busy woman.

Of course there is such a thing as over-doing, and over-entertaining the guest.

A house guest should be given some time to herself, for reading, writing letters and relaxation. Hospitality does not mean filling in every minute, whether to the guest's liking or no.

It is a good idea, before making up the day's program, to consult the guest. You may have arranged for a table of bridge; and your guest may have a scarlet loathing for cards. She may prefer a tramp in the woods.

And the friends who drop in. Do not hesitate to ask them for lunch or dinner, because the larder is not groaning with good things. It is a common saying that strange cooking delights the palate. You may have planned very simple fare; but the mere fact that you feel the guest a comfortable person of whom you do not make "company" is a compliment in itself.

So let us all not forget the value of—true hospitality!—Helen Grigg Green.

THE FARMHOUSE KITCHEN

During the winter, many a farmhouse kitchen is called upon to do duty as a living room. There are assembled the most comfortable chairs, the dependable clock, the best light and oftentimes, the long settee. The winter evenings start early and around the evening lamp on the kitchen table are spent the restful hours well earned after the hard work of spring, summer and fall.

Why not start the winter off right by making the kitchen a more attractive place both day and night? With a little careful planning and the expenditure of little money. This important room can be made well worthy of the constant use to which it is put. There are paints for the walls, which will make a remarkable difference in the light of the room, varnishes which reflect and increase the cheerfulness of a none-too-strong winter sun, and lighten the dull places, and at the same time protect the wood beneath from warping, from dampness and from weather changes. In winter, the floor whether of wood or linoleum, needs surface protection more than at any other season from tracked-in mud and snow.

Even the most old-fashioned kitchen, if its walls, floors, window frames, doors and cupboard doors are painted or varnished, will be a pleasant workshop for the farmers' wife, a cheerful dining room and a comfortable center of the home. For a few dollars, and very little trouble the kit-

chen can be made a place of beauty. Winter is the time to brighten interiors.

TAKE TIME FOR THE LITTLE ONES

Don't be too busy in these strenuous, hustling days, to take the time once in awhile to cuddle the little folks. How prone we are to think this thing and that thing must be done, the children can wait, and the first thing we know they are too big to cuddle! If we put everything else ahead of them and their wants while they are too small to help themselves, can we expect them to have very much time for us when we are old?

I am a widow with a little daughter of seven, my mother is entirely helpless, and I am teaching. It will be self-evident that I am a busy woman, but the little girl is unusually susceptible to scolding and fond of being petted—probably because her father died before she had a chance to know him, and I have always had to take the place of both parents—and I have never yet refused to give her a cuddle when she wants it, unless under stress of rare emergencies and at such a time she usually has better sense than to ask. Tonight I was sewing and was extremely busy but the girl has a bad cold and was coughing so much of the time it made her more "fussy" than usual so I took the time to rock her for a few minutes before a cozy fire and I don't think it was a waste in any sense whatever.

Once when she was a tiny baby she cried frantically for a long time one evening. It was evident that she was crying from pain, not temper, and I had no idea what might be the trouble. I sent for my neighbor and also for the doctor, but by the time the doctor arrived she was quieter and he said she had probably had an attack of colic. We called it a joke and of course calling a physician was very foolish but I have never been sorry (though if it had occurred more than once the condition of my purse would probably have made me sorry.) I surely prefer thinking that I paid for one very unnecessary call, rather than to have to think I saved the price of a call and lost my girl.

How often we hear little ones pleading "Mamma, take me," and the busy mother says "Run and play, I haven't time." Would we say it if we stopped to think that we won't always have them? And if nothing worse happens they will soon grow up. I rarely ever go anywhere and leave my small daughter. She likes to take all trips as well as I do and often the business trip for me is a holiday for her. This fall she was "crazy" to go beaching so I took an hour out of two busy Saturdays to go with her. Foolish? Perhaps, but much more frivolous foolishness can be and often is, indulged in by mothers of small girls.

Just at present the storm is howling outside and she says "I'm lonely tonight, Mamma, aren't we going to bed soon?" I told her "Yes, very soon" and we are for, after all, what could be more important than just keeping faith with these little ones? As they grow up they must know that what mother says is true and can be depended upon every time.

It's a saving of fuel, when cooking certain foods, to prepare enough to use for two meals. It need not be served in the same fashion each time.



PENNSYLVANIA FARMER PATTERNS
Give figures and letters of each pattern exactly as printed at beginning of each description or we will not be responsible for correct fitting of orders. Give bust measure when ordering waist patterns, waist measure for skirt, and age for children's patterns. Address Pennsylvania Farmer, 261 S. Third Street, Philadelphia, Pa.

3165.—Nightie for Kiddie.—The pattern is cut in 5 sizes: 1, 2, 3, 4 and 5 years. A 4-year size will require 3 1/2 yards of 27-inch material. Pattern, 10 cents.



3088.—Combination for Girls.—The pattern includes all styles illustrated. It is cut in 6 sizes: 2, 4, 6, 8, 10 and 12 years. The drawers require 1 1/2 yard of 36-inch material, the petticoat 1 1/2 yard, and the undershirt 1 1/2 yard for a 10-year size. Pattern, 10 cents.

2484.—A Pretty Slip-on Night-dress.—The gown may be finished with openings at the shoulders if the slip-on style is not preferred. The pattern is cut in 4 sizes: Small, 32-34; medium, 36-38; large, 40-42; extra large, 44-46 inches bust measure. Size medium requires 7 1/2 yards of 27-inch material. Pattern, 10 cents.



3079.—Pajamas for Ladies.—The blouse is made in slip-on style. The bloomers may be finished with loose or gathered lower edge. The ruffle below the garters could be omitted. This pattern is cut in 4 sizes: Small, 32-34; medium, 36-38; large, 40-42; extra large, 44-46 inches bust measure. Size medium will require 4 1/2 yards or 36-inch material. Pattern, 10 cents.

HOMESPUN YARN

If you saved the paraffine from last year's jelly, washed it and stored it away in the cupboard you made a worth-while saving in this year's jelly-making.

Meat canning time is here. Many housewives would as much think of failing to have a good supply of canned fruit as to be without canned meat.

The A. B. C. of household arrangement: Place the necessary furniture within a given space in a way that will be reasonable for use and pleasant to see.

Do the children have a weekly allowance of spending money, or is it a nickel now, a dime then, and a quarter some other time, the total of which neither child nor parent can even guess?

The State of California

Makes You This Bargain Offer

The State Land Settlement Board of California will sell bona fide homeseekers an irrigated farm of 20 or 40 acres in San Joaquin Valley, with 36 1/2 years time for deferred payments

These farms are in Farm Land Unit No. 3, consisting of 1540 acres in Merced County, the heart of the famous San Joaquin Valley, and will be offered to bona fide homeseekers.

These carefully selected lands were acquired by the State of California for settlement purposes. A complete irrigation system is being installed. Price per acre varies according to location. Five per cent of purchase price payable when deal is made; remaining over a period of 36 1/2 years, with interest at 5 per cent per annum.

When this unit is exhausted, other similar tracts will be opened up as rapidly as land can be prepared for the new settler.

An unusual opportunity to acquire a small ranch in winterless California, at a minimum cash outlay.

All deciduous fruits are profitably grown, and alfalfa is a paying crop. Ideal conditions for stock and poultry. You have benefits of

established communities. Schools are ready, and fine roads. The various fruit associations have a remarkable marketing system. You raise the fruit; no bother about markets.

The Santa Fe operates five trains a day from Chicago and Kansas City to California. Two of them—the California Limited and the San Francisco Limited—are solid Pullman trains with dining cars all the way.

The Navajo, Scout, and Missionary carry standard and tourist sleepers and chair cars; meals in dining cars east of Kansas City and at station dining rooms west. Meal service for all trains by Fred Harvey. The California Limited and the Missionary have through sleepers by way of Grand Canyon of Arizona.

The Santa Fe tourist sleepers are comfortable, and you save about half the berth rate. Station meals also are economical—a "square meal" for a dollar.

You Can Farm All Year in California

The State Board's booklet about these lands and plans for financing improvements, Santa Fe illustrated folders descriptive of San Joaquin Valley and the trip there, mailed on request.



Let me help you plan your trip.
C. L. Seagraves, Supervisor of Agriculture, Atchison, Topeka & Santa Fe Ry., 932 Railway Exchange, Chicago.

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Best results from large spready cow hides for COATS
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Mail post card or letter today for this big illustrated catalog! Describes the most sensational sale reductions ever made! Everything offered at big reductions. Never before have we made such startling mark-downs! Take advantage of this extraordinary drop in prices by sending for this special Sale Catalog at once!

Sale Closes Feb. 28
Every thing shown in special Sale catalog is offered at rock-bottom prices. Sale includes men's, women's and children's wearing apparel, furniture, notions, farm implements, auto accessories, sporting goods, sundries, jewelry, dry goods and dress fabrics, furs, hardware—literary scores and hundreds of things you need. This catalog will save you money!

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Remember: February 28th is the last day of this sensational sale, so rush postcard for your catalog today. If you are a customer of ours there is no need to write a catalog has been mailed to you already. Don't miss this money-saving Special Sale. Submit mail postcard, and catalog will be sent you at once. Write today—NOW!

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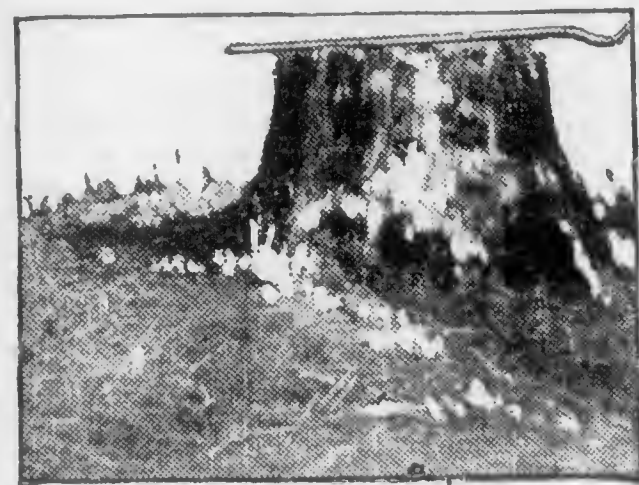
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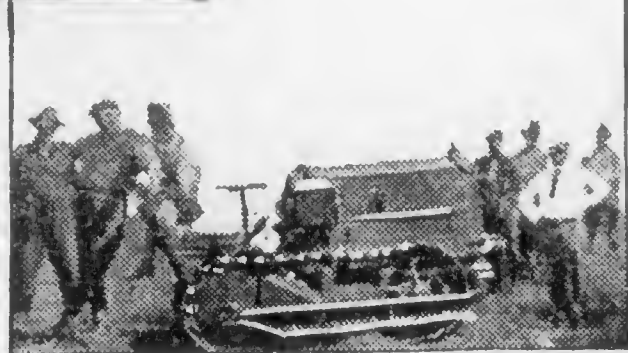
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THIS Lamp will make your home modern, so candle power. Costs but trifles and a cent a night to use. No wicks to trim. No chimney to clean. No smoke, no odor. Can't tipple or spill. Let your dealer get you a Quick-Lite on approval. Write for Free Book about this wonderful home lamp. Address Dept. 61
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Clears the Way for Tractors!

BLAST out your stumps—get your land in shape to be cultivated with modern farm machinery. Plowing furrows among a lot of stumps is *not* up-to-date farming.

Machinery farming is usually the cheapest method of cultivating the soil. But you cannot use a tractor unless your fields are entirely free from obstructions. Clear your land with Du Pont Red Cross 20% Dynamite—easy, cheap, quick.

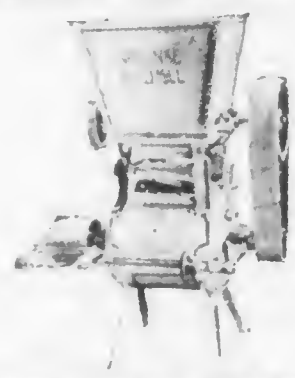
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Our Farmers' Handbook of Explosives tells you how to use dynamite for stump and boulder blasting, ditching, tree-planting and other farm work. Write for a copy TODAY. It's free.

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Ground Grain
does not pass thru an animal whole and undigested.

National Stone Burr Feed Mills
save many dollars on your feed bills. Ask your dealer about these well constructed mills or write us for description.

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FOR HAND KNITTING
New club rate for lots of 10 lbs. (40 skeins) or more to single address. Regularly \$66 a skein, 1 skein (1 lb.) \$2.00. SEND AT ONCE FOR FREE SAMPLES.

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Virginia Farms
You can become happy and independent farming in Virginia. You can grow profitable grains, corn, fruits, alfalfa and all grasses, beef and dairy cattle. Virginia boasts the finest apple growing section in the world. Prices very reasonable, but all-around. We welcome you. Write now for illustrated hand book and maps.

G. W. KOINER
State Commissioner of Agriculture, Richmond, Va.

Please Mention Pennsylvania Farmer When Writing to Advertisers

HOW I RAISED MY PIG

On the 24th day of May, Mr. Brinton took me to look at some pigs and papa bought me one; I named it Polly and on the second of June I weighed it and it weighed fifty-five pounds.

Papa bought me a movable pig-pen, which seemed to be a great help as she always had a clean bed and green grass; until August I fed her three times a day on middlings, hom-



Mary McMullin and Her Pig

iny and tankage, but on account of the heat I thought it better to feed her but twice a day. I scrubbed her once a week, but she became too heavy for me to handle and now takes a mud bath.

Polly is fond of Seckel pears and I have enjoyed raising her very much as I had no idea what a pet could be made of a pig.

Mary McMullin,

Member of Brandywine Pig Club (1920).

HOW I RAISED TOPSY

On June 2nd I bought Topsy from my father for seven dollars and she weighed 45 lbs. On June 27th I penned Topsy in a small place, and then fed Topsy two parts cornmeal, two parts middlings and one part tankage, mixed with about one-part skimmed milk, every night and morning. I washed Topsy three times daily and she seemed to enjoy it, but I found that she was not getting enough feed so I increased the rations every day.



Frances Darlington and Topsy

This picture was taken July 27th, and Topsy seemed to enjoy being snapped as she stood still; on July 8th I weighed Topsy by measure, as this was much easier than putting her in a bag, and she weighed 112 lbs. and until Sept. 1st, I fed just good sense not to use any paint at middlings, tankage and milk; I kept all the neighbor women think she salt and water in the pen all the time. From Sept. 15th I fed about State Journal.

one bushel of new corn, which she seemed to enjoy and on October 12th, she weighed 217 lbs.

I had spent 34½ hours and she cost me \$26.50 and the day we had our roundup I sold her dressed for \$40. —Frances Darlington.

FARM BUREAUS IN DELAWARE

The third annual meeting of the Sussex County Farm Bureau was held Thursday, Dec. 2, at the Court House in Georgetown.

Dean and Director C. A. McCue, of the School of Agriculture; Mr. M. O. Pence, State County Agent Leader; Mr. Theodore T. Martin, State Boys and Girls' Club Agent; Miss Kathryn Woods, newly appointed Home Demonstration Agent for the State at large; Mr. M. C. Vaughn, County Agent, and Miss Dorothy Emerson, Boys and Girls' Club Agent, met with the executive committee, and a good representative crowd of men and women of Sussex County Farm Bureau Members, at morning and afternoon sessions.

The morning session was taken up with the committee meetings and reports of this year's Farm Bureau activities. Miss Dorothy Emerson, County Club Agent, reported that 32 boys and girls' club had been organized this year in Sussex County and the exhibit of canned fruits, garments, etc., showed that these clubs had been doing excellent work.

Mr. M. C. Vaughn, County Agent, discussed the following Farm Bureau projects, which have been very popular with the farmers and the furtherance of which has greatly benefited them: Sweet potato seed treatment; hog cholera; better plant project; poultry culling; soy beans; soil fertility; co-operative marketing; wilt resistant tomato seed; corn shows, permanent pasture; clover seed harvester demonstration; cow testing; drainage. The recommendation of Mr. Vaughn, that several of these projects be continued during the ensuing year, was acted on favorably by the program of Work Committee.

Mr. Thomas N. Rawlins, of Seaford, chairman of the Expense Budget Committee, recommended that the Farm Bureau budget for the coming year be increased \$1600 in order to more adequately provide for the growing needs of the Farm Bureau.

Albert M. Tarr, of Seaford, chairman of the Membership committee, recommended that the Farm Bureau membership fee be five dollars per family—to include children between the ages of ten and twenty-one years. Three dollars of this fee will be paid to the state and National Farm Bureau Federation and the remainder will be retained by the County Bureau.

The question of forming a State Farm Bureau Federation was discussed. Mr. Cosden stressed the necessity of the three counties of this state forming a State Federation, and stated that both New Castle and Kent County Farm Bureaus had already decided to federate.

Mr. Brooks L. Ross, of Seaford, president of the Seaford Produce Growers' Association, Inc., showed the need of a strong national farmers' organization.

What They Think

When a young woman has the good sense not to use any paint at middlings, tankage and milk; I kept all the neighbor women think she salt and water in the pen all the time. From Sept. 15th I fed about State Journal.

Neighborly Talks



THE STRENUOUS NEIGHBOR

There are not hours enough in the day for the strenuous neighbor. He works early and late. He takes time by the forelock and rides in the saddle all day. The supreme end of life for him seems to be work. If he is a day behind in his planting he makes life a burden for his family and for the hired man. His hired man is usually halter-broken, and leads well, but he objects to being driven. Help never sticks to him as it does to his winsome neighbor.

The strenuous neighbor cannot be strenuous moderately. He gets his potatoes in too early and the frost nips off the tender shoots as they spring from the ground. He overloads his wagon and the village blacksmith gets a job, for the wagon breaks down. He works his horses too hard and they give out. He lengths his days and shortens his life by burning too much oil in the lantern. He never has time for recreation. He has forgotten that recreation recreates. He forgets that a candle burned at both ends flickers out in the middle. Ambition is excellent in its place—it makes an excellent condiment but is hardly suitable for a full meal.

A strange blindness often affects the strenuous man. He becomes blind to the beauties of nature; to the charms of the wild flowers that life up their delicate faces to him; to the glory to the sunrise, to the charms of the clouds that once seemed to him "Argosies that sail the azure sky." He even becomes deaf to the songs of the birds, and has ears only for some strenuous hen who loudly boasts of an egg, fresh-laid, or eyes for the wheat or corn or products of his labors.

The strenuous neighbor misses too much of life's sunshine. He should stop occasionally, and rub his eyes for a moment, and realize the truth of these words of the poet: "Tis a goodly, pleasant world that we mortals journey thru."

And our Father's constant blessings fall around us like the dew. Now it is better to be strenuous than to be indolent, but it is hard to keep a whole harness on a strenuous horse, and a man who is too strenuous often works more comfortably in single than in double harness. He is always breaking something—possibly a record.

But, after all, the strenuous man is an inspiration to some of us who are naturally indolent, and who have an affinity for a rocker and a newspaper just at the time when crops are begging, in their dumb, voiceless way, for our attention. Possibly it may be beneficial for us to rub up against the strenuous neighbor occasionally.

Don't fool yourself that So-and-So has everything he wants. Do you imagine that he doesn't know how you and other people regard him? And do not think for a moment that he enjoys being looked at askance, or that he wouldn't exchange most of his ill-gotten gains to stand high with you and other people—and to stand high with himself.

The Sixth Annual NATIONAL TRACTOR SHOW And Educational Exposition

THIS is your show. It has been planned in the interests of all practical farmers. It has the backing of the Department of Agriculture and of all agricultural schools and authorities. The program arranged is the equivalent of a college course in tractor farming. You will gain a wealth of new ideas that can at once be turned to real profit. Plan now to come.

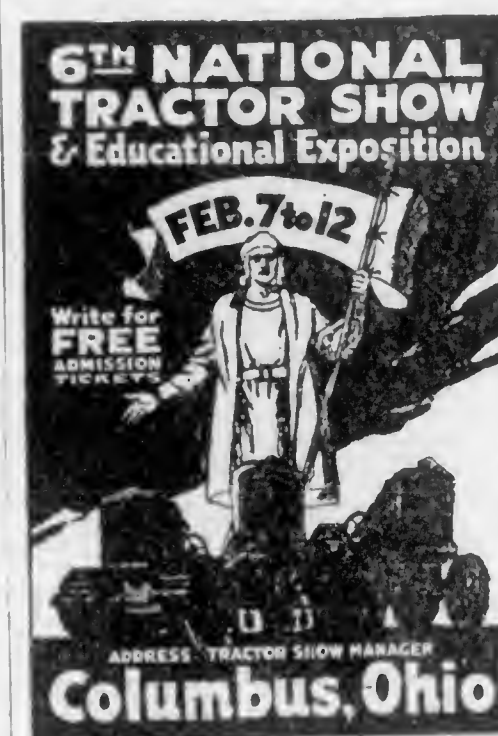
A College Course in Tractor Farming

Compressed into Four Days

Few men can picture, even in their own minds, the tremendous growth of power farming. Rapidly it is changing many of the established laws and methods of agriculture. Certainly today it is the foremost of all great opportunities confronting the farmer in his work. You will get real cash-value information out of these lectures, speeches and exhibits. The talks will be delivered in a special lecture hall and the program also includes daily discussions, mass meetings, band concerts, etc. Everyone who attends will have a good time and a profitable one.

National figures like Pres. Elect Harding, Sec. of Agriculture Meredith, J. R. Howard, Pres. American Farm Bureau Federation, Joseph Hirsch, Chairman Agriculture Commission, American Bankers Association, and others have been invited to speak. The American Societies of Automotive Engineers and Agricultural Engineers and a number of the foremost Agricultural Colleges will have educational exhibits. And don't forget that all of this is in addition to the biggest display of tractors and tractor implements that has ever been gathered.

COLUMBUS OHIO Feb. 7-8-9-10-11 and 12



Eight huge buildings belonging to the state of Ohio—modern, fireproof, well lighted, scientifically heated and connected with one another by covered passageways—will house this show. Every arrangement has been made for the comfort and convenience of those who attend. Write today for special free tickets of admission. Ask for our booklet explaining the entire program. A hundred thousand farmers will be here to meet the power farming experts of the country.

National Tractor Show Committee, Columbus, Ohio

Gentlemen—

Please send me your booklet regarding The Sixth Annual National Tractor Show. Also inclose free tickets for myself and _____ others of my family.

Name _____

Street or R. F. D. _____

City _____

State _____



Placing the reinforcing steel of the door opening.

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Costs a Little More—
Lasts a LOT Longer

It does cost more to build with everlasting Natco Hollow Tile than with materials that soon decay, but it's far cheaper in the long run. A Natco Silo will not rot, burn, burst or blow down. It has no hoops to tighten, needs no painting and seldom any repairs. You can pass a Natco Silo to your children practically as good as new. On the farm will bring more should you wish to sell.

Farmers who figure costs closely are using Natco Hollow Tile for silos, dairy barns, hog houses, dwellings, etc. Our book "Natco on the Farm" describes and pictures many such uses. Send for it today—no charge. Ask your building supply dealer to quote you on Natco Hollow Tile.

National Fire Proofing Company
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23 Factories assure a wide and economical distribution



Foundation and bottom courses of a Natco Silo. Note the still air spaces and the steel reinforcing bands.

WITTE
\$49.45
F.O.B. 2 H.P. PULLS 23
Direct from Factory to You
ALL SIZES AND STYLES—
2, 3, 4, 6, 8, 12, 16, 22 and 30 H.P.
at proportionately Low Prices. Above price for 2 H.P. is for engine complete, on skids ready to use. From Pittsburgh add \$5. Quick shipment. Write or wire for Big New Engine Catalog \$1.00.

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CLOVERS, TIMOTHY
Bell Brand Grass Seeds are the purest, best quality that can be purchased. Specially adapted to your climatic and soil conditions—hardiness bred into them. The development of 42 years' successful seed culture.

FREE Samples and Catalog
Write for Isbell's 1921 Annual—ask for samples of any field seeds you want. Isbell's "Direct from grower" prices assure you of the savings on sterling quality seeds—seeds that grow as their fame grows.

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Gloves at Cost
BIG UNLOADING SALE
One dozen pair genuine, strongly made warm and durable Canvas Gloves, heavily lined, for \$2.25. Cash price \$3.00. Write for full particulars. Money refunded if you are not satisfied. Send check or money order.

FARMERS GLOVE CO.
DEPT. 20
MADISON, INDIANA

PIPE
second hand. Large stock all sizes furnished with new threads and couplings
PROMPT SHIPMENT
J. F. Griffith, 416 Moyer St. Phila.

500-Shot "Daisy" Air Rifle



We will send this Air Rifle, all charges prepaid, for 5 yearly subscriptions at 75 cents each; or with a single subscription and \$2.00 extra. The Daisy Air Rifle is a repeater, lever action, magazine holds 500 light rifle shot. Automatic retainer prevents shot from rolling out of barrel. 31½ inches long. Nickel plated barrel, walnut stock. An ideal rifle for target practice.

PENNSYLVANIA FARMER, 261 South Third Street, Phila., Pa.

Please Mention Pennsylvania Farmer When Writing to Advertisers

COUNTY NOTES

Lebanon County, Pa.—Mild and pleasant weather has prevailed so far this autumn. The general opinion of a local weather prophet is that the winter will be quite mild and open. All corn is husked and in the crib. Butchering is the order of the day now with our folks. We had a large apple harvest this autumn and much cider and apple butter were made. Tobacco stripping will soon start. Farmers are much concerned over the great drop in prices of farm produce and production will undoubtedly be curtailed the coming season. The local granges are very active and influential in membership and influence.—Leonard F. Strickler.

Blair Co., Pa.—We are having fine weather, we also had a green Christmas. The low price wave has hit this section of the county all right. Shredding stover, sawing wood and winding up threshing have been the jobs done lately. Some sod was plowed the past few weeks and manure has been hauled from yards for next year's corn crop. Owing to the unsettled milk situation, with no market for whole milk, more farmers are feeding steers than usual to turn the big corn crop into money. This county had a good fair in October, but the expenses were so heavy that no money was made. Frank Printzenhoff sold his farm of 160 acres in Kelly township for \$20,000 to a man from Pottsgrove. Three new state banks of \$25,000 capital each were organized in the county in 1920, and they are all doing some business. The annual meeting of the farm bureau will be held on the 15th of January when a paid membership will be fully discussed, and a corn exhibit will be made. Prices: Wheat, \$1.75; corn, 75c; oats, 60c; veal calves, 13c; pork, 15c; butter, 56c; eggs, 78c; chickens, 22c. The Pennsylvania Farmer is one of the farm papers which favors the interests of the producer at all times, and works for the best in country life on the farm and in the home. May 1921 be a good year for them in their business.—J. N. Glover.

Union Co., Pa.—The open weather has enabled farmers to finish husking corn and to store the stover, both of which were very good. Shredding stover, sawing wood and winding up threshing have been the jobs done lately. Some sod was plowed the past few weeks and manure has been hauled from yards for next year's corn crop. Owing to the unsettled milk situation, with no market for whole milk, more farmers are feeding steers than usual to turn the big corn crop into money. This county had a good fair in October, but the expenses were so heavy that no money was made. Frank Printzenhoff sold his farm of 160 acres in Kelly township for \$20,000 to a man from Pottsgrove. Three new state banks of \$25,000 capital each were organized in the county in 1920, and they are all doing some business. The annual meeting of the farm bureau will be held on the 15th of January when a paid membership will be fully discussed, and a corn exhibit will be made. Prices: Wheat, \$1.75; corn, 75c; oats, 60c; veal calves, 13c; pork, 15c; butter, 56c; eggs, 78c; chickens, 22c. The Pennsylvania Farmer is one of the farm papers which favors the interests of the producer at all times, and works for the best in country life on the farm and in the home. May 1921 be a good year for them in their business.—J. N. Glover.

Cumberland Co., N. J.—A two-day farmers' institute was held in the agricultural department of the Shiloh High School in December. There were 36 agricultural boys present with the farmers of the surrounding country. M. Robert Trimmell, was moderator for the meetings. The speakers were H. R. Cox, State College of Agriculture; Gilbert Barton, Woodstown, a practical farmer; Fred Gardner, Robbinsville; B. S. Ellis, Vineland, a successful poultry man; A. R. Kohler, Westville; H. E. Taylor, president N. J. Council of County Boards of Agriculture; Walter Minch, Bridgeton, and Mrs. Helen Minch App, of New Brunswick. The evening entertainment was given in the school auditorium by Mrs. Rose Morgan with her "Songs That Live."

A WINTER WHEELBARROW

A very handy implement for winnowing where there is much snow.

It is made just like an ordinary wheelbarrow except that a single runner is used instead of a wheel. The frame should be made and the axle attached to the same as for a wheel, but the axle should be square instead of round. Into the center of the axle mortise a piece of tough wood 2 inch square and about 1 ft. long. To the lower end of this upright the runner is attached. The runner should be 2½ or 3 ft. long and thoroly braced to the upright. The runner must come up higher in front than for a hand sled so it will push easily thru deep snow and over uneven surfaces. This is better than a hand sled, as it can be used on sliding ground or in a narrow footpath where a sled with two runners could not be used at all. A still better way is to have one of these runners made to fit the ordinary wheelbarrow, then by removing one iron where the axle is attached to the side-arm it can be changed in a few minutes from wheel to runner or vice versa, thus avoiding the expense of an extra barrow for winter use, and also saving storage.

TIME TO MOVE

Many young married people have enough of sentiment about them to wish to remain all their lives on one farm, whether they build a new house or not, and in many instances farmers and their wives can do no better than to remain on one farm indefinitely, but there are cases when moving is the only safe and sensible thing to do. Particularly is an inherited farm regarded with peculiar and tender feelings, and often the couple who dwell there think that nothing but bad luck will follow them if they forsake "the inheritance of their fathers." But take the case of the young man who outgrows his farm and can buy nothing near at hand. Should he handicap himself and his family on a little place when he has the capacity for greater things? Most certainly not! Keep the little place if sentiment dictates, but he should not lose opportunities simply because his ancestors owned the farm, or because he and his young wife began house-keeping there.

Then there is the case of the house where some tragedy has occurred. The death of some beloved child, a suicide, a murder, a shocking accident, long illness or some cause makes the wife and mother dissatisfied and restless, but the husband and father feels sure that everything will come right in time. Not being the woman, a farmer cannot understand how the stillness, the sight of the spot where the tragedy occurred, the familiar rooms and all the surroundings bring back the pain and sorrow to the heart of the one who must spend most of her days indoors. One man who sacrificed a fine farm for a poor one because of a tragedy was thought to be very foolish by his friends and relatives, but he knew his wife's reason and happiness depended upon the change. Another farmer who laughed at his wife's apprehensions and trusted to time to bring about a change, found to his dismay that nervousness and brooding caused by living in a haunted house, sent her to a sanitarium, and that a timely move might have saved it all.—Hilda Richmond.

We're hoping the New Year will bring peace, happiness and prosperity to all.

FRANCE RESTORES WAR REGION FARMS

Sixteen thousand square miles of ruined fields, an area of desolation equal to the states of Rhode Island, Connecticut, the southeastern corner of New York and all of New Jersey, was the war's legacy to the farmers of France. This stretch of agricultural territory had previously yielded a living to some 2,700,000 people and was ranged over by flocks and herds numbering more than 1,000,000 head of cattle, sheep and goats.

Armistice Day, 1918, saw this territory reduced largely to a sterile and trackless waste. Dispersed beyond official reckoning were its inhabitants and their possessions. Wiltedness of the war's desolation in these regions were hopeless of restoring the country.

But what then seemed impossible has taken place. The great war desert of France has since been made to bloom. More than 2,000,000 of the population driven from their homesteads by enemy invasion are back to native boundaries. Save only in a few regions where a thin top soil utterly vanished before the blast of war, the countryside has become productive; in some places even more productive than before it was ravaged.

This picture of agricultural restoration in France is drawn from official statistics of the restoration accomplished between the end of the fighting and Armistice Day, 1920. In these two years, according to returns made to the French Commission in the United States, the devastated regions have been nursed back from absolute barrenness to a productivity sufficient to feed the repatriated people.

Some conception of the work that was necessary to bring about this result is afforded by official figures of the Committee for the Devastated Regions. Gun fire had sown the torn-up battlefields thick with shells and other projectiles. The task here was to harvest this perilous crop from 16,000 square miles of France. It was accomplished by April 1 last.

The territory ranged over by the fighting armies was encumbered by thousands of tons of barbed wire entanglements. Then thousand square miles of territory thus encumbered was also cleared by April 1. Perhaps the largest ploughing operation in the history of the world was proceeding in the wake of this harvesting of steel. It involved the furrowing of almost 6000 square miles of French soil to permit of first sowing. And while the plough shares were combing desolated France back to productivity, 178,500 houses were repaired, 46,570 temporary homes were built and 13,100 damaged dwellings were restored.

This was the preliminary work accomplished early in the present year which made possible the later achievement in food production. One of the impressive evidences of this production is the huge stacks of unthreshed grain now dotting the fields which only a few months ago were bare like lava beds than farm land. Intense effort on the part of the returned peasantry aided by a good season has, according to official reports of the office of Agricultural Reconstruction, insured larger than pre-war crops in many sections of the invaded territory.

Estimates are that this year's cereal crops—wheat, barley, rye and oats—will be 11,578,000 quintals (220½ pounds to the quintal) compared to 20,500,000 quintals produced before the war. The beet and potato crops will total almost 20 million quintals or 25 per cent above pre-war production. The total agricultural production exceeds that of pre-war days.

The five departments of the Aisne, Nord, Oise, Pas de Calais, and Somme, favored by mild climate and the quality of their soil are foremost in the present year's production.

PENNSYLVANIA'S FORESTS

For several months past I have had the pleasure of talking occasionally with the readers of Pennsylvania Farmer. I am sure these little talks have helped to bring the story of Pennsylvania's forests close to the minds and hearts of the people of the Commonwealth, because they have brought me many letters from all sections. And each of these letters shows interest. They prove that the people of the state appreciate the needs of the state along forest lines.

Many people have asked me to summarize the forest needs of the state. I am therefore glad to submit the following:

First.

We must stop the forest fires. But we cannot stop fires without money. For that reason we must have the appropriations necessary to give effective protection against fire in the woods. We ought to have a million dollars for the years of 1921-22. This will mean but four and one-half cents to protect each acre now owned by the state (to say nothing of the private lands which must be protected also) and this amount per acre will be reduced with each new acre purchased.

The money available this year for fire protection amounts to but four and a half mills—mills, not cents—per acre. That is not sufficient to do the work. What we shall ask of the Legislature is little enough. This money will be spent for many permanent improvements, such as fire towers, fire trails and roads, and the establishment of communication systems. This appropriation for fire protection, therefore, is the first of our forest needs.

Second. We must set our devastated lands at work again growing trees. Therefore we must have legislation, in conjunction with Federal legislation, which will effectively check wasteful lumbering and all forms of forest devastation. This applies to all forest lands, including state forests and private timber tracts, but not to woodlots on farms.

Third. We must have more state forests, and to buy them we must have money. Just how much money the Legislature will be asked to appropriate for this purpose depends upon the revenues of the Commonwealth as reported to the Legislature by the Auditor-General. Every cent we can get will be none too much. The Commonwealth must add to its forest holdings, for no other forest lands are permanently safe. There are 5,000,000 additional acres in Pennsylvania which the state should own. It can make no better investment.

Finally, our great need is the patriotic interest and support of all the people of the Commonwealth.—Gifford Pinchot, State Forester.



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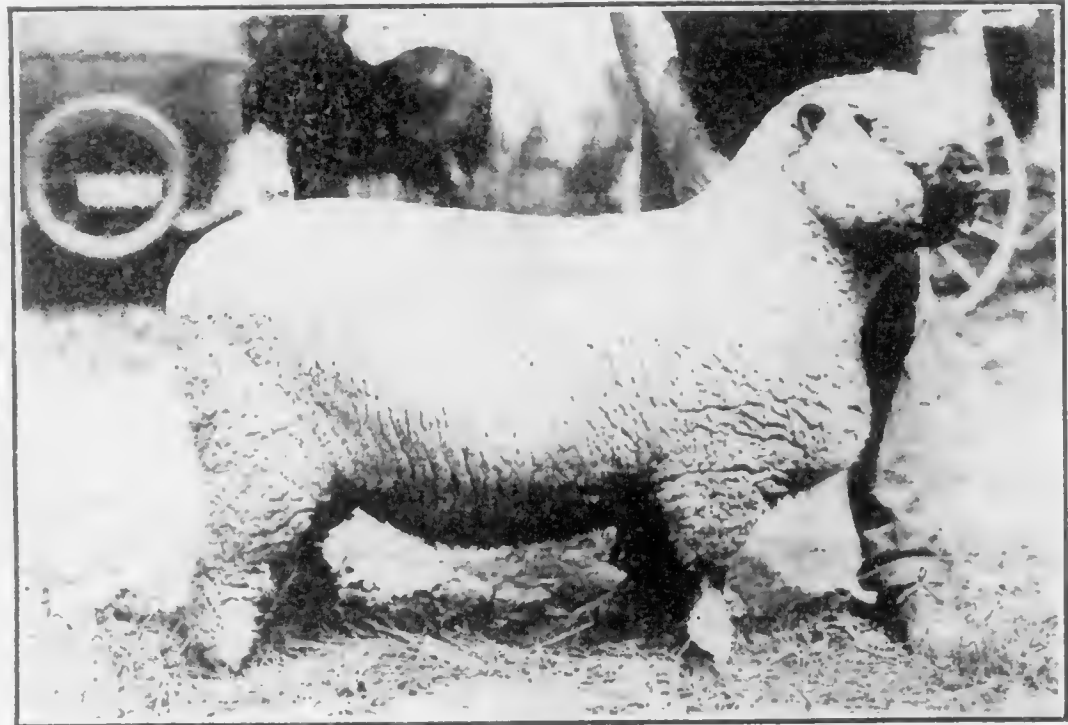
An appeal of the National Sheep and Wool Bureau of America ought to receive an interested hearing. It is for stamped and branded fabrics. If a garment is made of fresh "virgin wool" it should be known. If it is of "shoddy" that, too, should be known.

There has been a lack of sincerity thrust into the time honored phrase "all wool." "All wool" once meant clean, new carded and spun wool. It has come to mean any kind of cloth made of any kind of wool. By "any kind of wool" is meant made-over rags. Worn out and castoff clothing is run thru the mill and made into cloth again. Garment buyers are paying top prices for shoddy.

Clothing manufacturers are at the mercy of the insincere fabric makers. They have no means of knowing that the cloth they buy in good

growers' associations, 25 on Nov. 18 had been supplied with wool sacks and shipping directions for sending their wools to the G. L. F. Warehouse at Syracuse. The total amount of wool expected from these counties will exceed the 500,000 minimum estimated that the marketing committee estimated that it would receive. This leaves five counties to be heard from. It is generally known that early in the spring five counties sold their wools or contracted to do so; therefore the wool from these five counties can not be consigned to the state warehouse. These county associations are the Washington-Rensselaer, Orleans, Monroe, Yates and Schuyler. However from some of these counties, small carloads of wool are being picked up and consigned to the state pool.

These wools are being graded and put into shape for sale. It is doubtful if the wool market will show any



Champion Shropshire Ewe, Ohio State Fair

faith as all wool is only all shoddy or at least 80 per cent shoddy. The purchaser of a suit cannot know that he is wearing cloth that has been worn many times before.

The wool raisers ask the right to use a label or hallmark that shall distinguish virgin wool from the shoddy. They ask that the marking be of such a character that the virgin wool may be known in every stage of the manufacturing process. Thus the manufacturers may know what he is buying and offering the retailer, the retailer may be able to guarantee his wares, and the consumer can be assured of the character of his purchase.

There is no assault upon the manufacturers of shoddy. Purchasers who want shoddy may have it. If virgin wool is branded the shoddy can be known because it is unstamped. Shoddy nowadays is fetching all-wool prices. It should fetch shoddy prices.

We have pure food regulations. Why not pure fabrics laws?—Chicago Tribune.

WOOL GROWERS RESPOND TO POOL PLAN

The wool-growers of New York feel they have reason to be proud of their ability to organize thru their state federation a plan for warehousing, grading and selling their wool pools. Out of the 35 county wool

activity before March or April. Meanwhile, the national fleece wool growers' association is planning to ask Congress, at its December session, to re-enact immediately the old tariff schedules on wool. It is well-known that wool has been allowed to enter the United States duty free for the past eight or nine years. Every county sheep association should help this plan along.—F. E. Robertson.

WHAT A HORSE EATS

From cost account studies made on 38 profitable New York farms in 1919, the State College of Agriculture found that the average horse ate in one year 6769 pounds of hay and 2804 pounds of grain.

One farmer was able to get his horses thru the winter of as little as 3125 pounds of hay but fed 4776 pounds of grain. One farmer fed only 770 pounds of grain in a year but fed 10,811 pounds of hay. The farmers who fed the smallest amount of grain per horse fed an exceptionally large amount of hay. The farmers who fed the smallest amounts of hay per horse fed an exceptionally large amount of grain.

Many western New York farmers have found that by roughing their horses thru the winter around a straw stack and feeding a very moderate amount of grain they can get their horses thru in good condition.

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And how they hated to drink—with the north wind howling, the snow or sleet driving, and the drinking water icy cold.

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Reports based on milk records of 25 herds (739 cows) for instance, show an average increase per cow per day of 2.45 lbs. This is 490 lbs. in 260 days, which at \$3.50 per cwt. totals \$17.15; with a saving of \$2.50 per cow in labor and 55¢ in fuel. That's a profit of 400% the first year.

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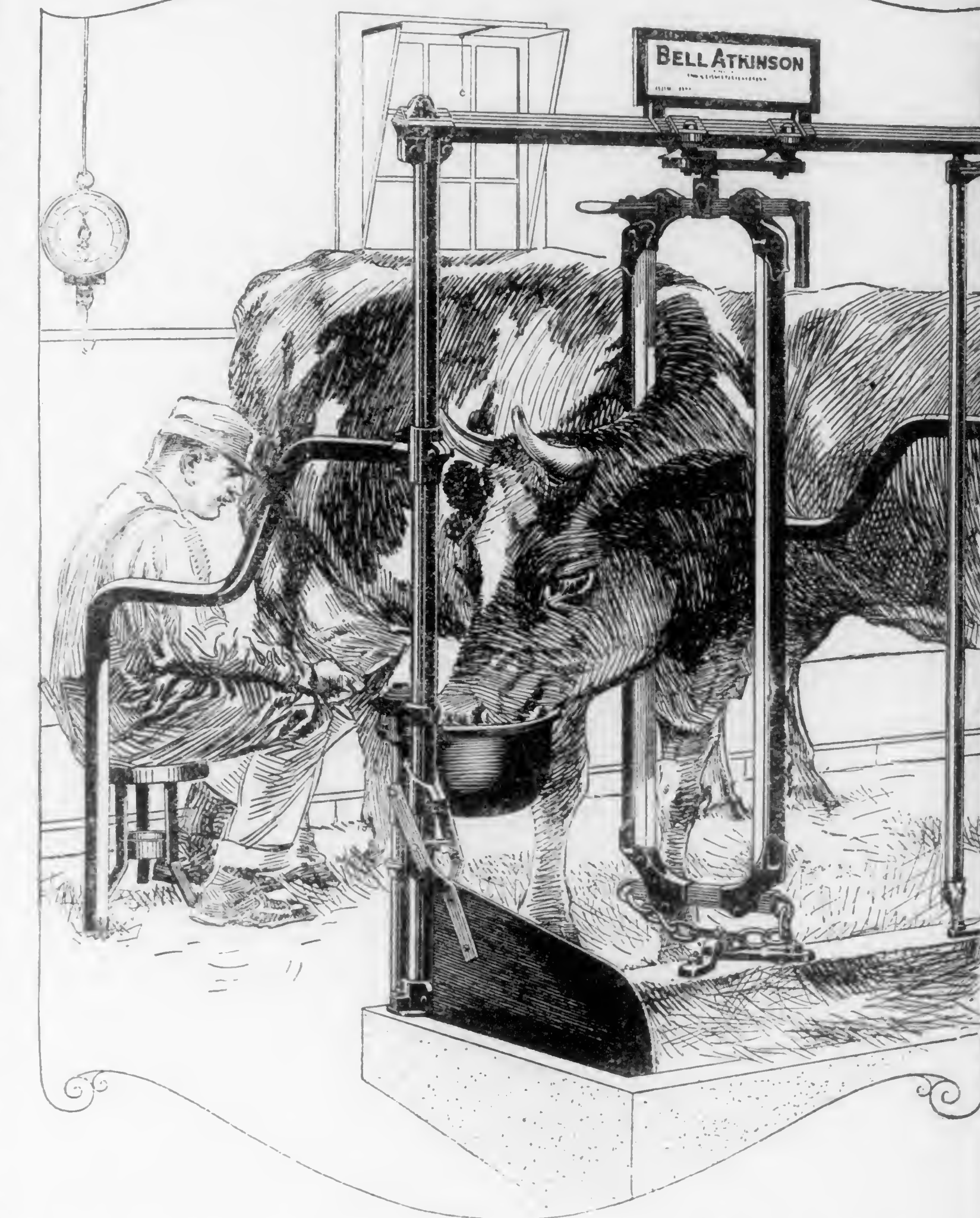
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There are many other James devices that save labor, increase milk yields, help sanitation and improve cow health, such as Cows, Calf and Bull Pens, Feed Mangers, Calf Pen Holders, Sute-Stop Swinging Post Swinging Cranes, "Safety

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Volume 49



What Work Should a Farm Tractor Do?

Best Results Are Obtained by Applying It to a Variety of Work

By F. A. WIRT

Member Amer. Soc. Agricultural Engineers.

TO PLAN farm work in terms of the tractor is the first and possibly the most important commandment in successful power-farming. Yet how distressing it is to observe the purchase and use later of hundreds and hundreds of tractors without due consideration of this vital factor of farming based on tractor-use and not on previous methods of crop production.

Horses and mules have furnished the bulk of motive-power for farming for generations. Oxen are not included because of their relatively insignificant number. From boyhood the farmer of yesterday and today, excepting the city farmer, has worked around and with horses until it is second-nature to think of farming in terms of the horse. Crop rotations, kind of crops, labor hired, in fact all field operations are based on the use of the horse. It is not strange then when the modern tractor is purchased that the proud owner cannot change overnight his habits of thought and from that time on base his farming operations on the use of the tractor. Nor is it surprising to hear that common statement: "I want a tractor chiefly for doing the heavy work—carrying the peak load." Such a view is usually commendable but unless the owner discovers the possibilities of the tractor the utmost results will never be obtained from the tractor bought.

A tractor can be used for the peak load and more, and in the word "more" can be found the true success of power-farming. Much labor of the mind will be required to overcome the natural use of horses and to adopt new power-farming methods but to the forward looking tractor-farmer it pays and pays big.

Successful tractor use means faster work easier and better done which is exactly what every farmer wants and is a statement which should be stated again and again. With a three-plover tractor of good design from seven to ten acres can be plowed in a day, depending upon soil conditions, grades encountered, depth and speed of plowing, length of working day and a few other factors.

From 20 to 30 acres can be disked in a day, and 25 to 40 acres of grain cut. Stumps are pulled, rack wagons and hay loaders operated, fence posts pulled, wood sawed, grain threshed, silos filled and many other kinds of work quickly and profitably done if the tractor user thinks in terms not of the horse but of the tractor.

Considerable thinking mixed with real effort and seasoned with deep determination is a winning combination for the new or old tractor user who is dissatisfied with less than the best results from his mechanical source of power. One successful method is to plan out during the winter the year's work and by using a rough sketch of the farm and numbering the different fields, approximate dates of using the tractor can be entered into a book or calendar kept for their purpose. Every farmer knows of course that weather vagaries and soil conditions will change the dates decided upon, but by setting a mark to reach much more will be accomplished than could be done without such a plan, a fact proven thruout life's experience.

Proof of the pudding is in the eating thereof, so let's see what tractor users report when they acknowledge that the tractor is a failure or a success. Notice how many more different uses are reported by successful tractor users than by those who failed. Investigation made by the writer in Maryland:

Successful Tractor Users Report

Draw-bar—Plowing, 189; harrowing and disking, 213; grain binder, 44; hauling, 30; pulling stumps, 19; spreading manure, 15; pulling rack and hay loader, 13; dragging and grading roads, 13; other uses (from 1 to 6 each), 12; different uses mentioned, 21.

Belt-work—Wood-saw, 64; silo filler, 53; feed grinder, 42; threshing, 45; husker shredder, 20; corn sheller, 16; hay baler, 11; other uses (1 to

2 each), 4; belt work (not specified), 25; different uses mentioned, 11.

From Tractor Failures

Draw-bar—Plowing, 50; harrowing and disking, 54; grain binder, 7; hauling, 4; hay loader, 2; pulling stumps, 2; dragging and grading roads, 1; manure spreader, 1; uses stated, 9.

Belt-work—Wood saw, 12; silo filler, 11; threshing, 11; feed grinder, 6; husker shredder, 4; hay baler, 4; corn sheller, 2; belt work (not specified), 6; different uses mentioned, 7.

Notice the wide and varied use of the tractor by the successful owner both for drawbar and belt purposes as contrasted with the uses reported by tractor failures. A deep lesson can be learned by comparing 21 and 9 the respective drawbar uses also 11 and 7 belt uses.

Another noticeable fact is the predominance of drawbar over belt work which indicates that the tractor is used first for the peak load of plowing and harrowing and then for whatever drawbar or belt work that can be handled always remembering however that the user who thinks in terms of the tractor finds more work for the machine to do.



It Pays to Load a Tractor Well

Belt work, it will be observed from the data above, is quite important, altho it would seem that many more could find profitable use for the belt pulley. On the other hand many tractor users use their machine for belt work exclusively, or almost so. Just the other day a farmer told the writer that he used a tractor for belt work only and never used it for plowing, disking, etc. He went on to explain that his tractor was too heavy and didn't have sufficient power to plow the grades on his farm. This tractor user would be better off if he sold his present machine and bought a tractor adapted to his conditions.

Additional evidence on the necessity of farming in terms of the tractor is hardly needed but more light can be found from the same reports quoted above.

Successful tractor owners reported an average of 59.3 days use in the year while the failures reported only 35.7 days yet the farms owned by the tractor failures were a trifle larger.

Still more evidence of the same kind can be found in the answer to the question: "How large must the farm be before a tractor is profitable?" Successful tractor users 107.9 acres Failures 154.8 acres

In one case 107 acres furnishes enough for a tractor and in the other case it takes 154.8 acres. The tractor user who plans his farming operations around the tractor as chief source of motive power has far greater chances for success in every respect with his tractor.

THE PRIZE TRACTOR ARTICLES

In response to the request made a few weeks ago by Pennsylvania Farmer for the personal experiences of readers with tractors a number of articles of exceptional value have come in. We

are sure their publication from time to time will help to enlighten the many farmers who are considering the purchase of a tractor. Below will be found the first of the series. We give it first place because of the size of farm, difficult conditions and the variety of uses to which it is put.—Editor.

OUR TRACTOR EXPERIENCE

A Pennsylvania Farmer Finds a Tractor Valuable on a Small Farm of 45 Acres.

First Prize Article

It is a much-discussed question whether a tractor is practical under our eastern conditions or if they are adapted only in the West on their large, level farms. Of course, the advertisement and agents say they work anywhere, but the experience and advice of our fellow-farmers is more to be depended upon. Further, in a purchase of this kind we want to consider many things before taking a step that cannot be retraced and which takes many hard-earned dollars. It is because of the help to those who may be seriously debating what to do about buying a tractor outfit that we are giving our experience.

We live on a small, hilly farm in York County, Pa., of 45 acres, 40 acres of which is planted to trees from 1 year to 11 years old. About two acres are level, balance is hilly, not rolling. Part of these hills have always been plowed with a hillside plow, while part cannot be plowed at all. A year ago we scouted the idea of ever using a tractor. "New occasions teach new desires." At least they make us hunt up methods. When the dry period of last June hit us a plot of two acres of trees that had not been stirred for 7 years, gave signs of suffering from lack of moisture. This piece had been giving us \$25 worth of fruit to the tree, so something had to be done. Low trees and close planting precluded horse culture. Again, a disc drawn by horses would make little impression on such hard soil. This condition brought our first thought of a tractor. Was it possible to use one here? Was it practical? Was it economical? What kind should we get? Who ever can answer those questions to every farmer's satisfaction is surely a friend in need.

At a recent demonstration we saw the one, which if any of the three machines demonstrated, would answer our purpose. Saturday we telephoned the agent explaining just what we had to do—a hard sod to be cut up, a hillside to be disced that had to be plowed with a hillside plow, and stumps to pull. Pretty hard problems, but we did not want a plaything on the place. They said, "we will try it." Monday found them on the job, but as the operator looked from the top of the hill where he was supposed to go down and come up again, he said it was the hardest job he ever tackled. In a few words, they left in the evening, and we had a piece of machinery that cost a sum that makes a farmer think twice these days before investing in it. Fact is, it took courage and sober thought to lay out that much money when our friends said we could never use it, and again, we were on the eve of a great fall in prices.

Every winter and spring we put hay, weeds, manure, etc., under and around the trees in this two-acre plot and this was not decaying rapidly enough, so that the mice were beginning to make us trouble. We put a heavy slab of concrete on the disc and went thru there until there was not enough for a mouse nest left. This we did every two weeks until the middle of August, when we seeded the cover crop. Now, next spring we are ready to handle that without a plow, working it in the soil as it should be. The trees and fruit (Continued on Page Six)

Soils and Fertilizers

Conducted by Dr. J. G. Lipman

Our readers are invited to send us their problems on soils and fertilizers and they will be answered by Dr. Lipman in this column.

COMMON SALT AS A FERTILIZER

COMMON SALT has been in use as a fertilizer for a long time. The farmers of the Orient long ago recognized its value as well as its limitations. For instance, the ancients knew that large quantities of salt tended to make land unproductive or even sterile. Thus, the Jews used large quantities of salt on enemies' fields that they wanted to make barren. The Romans used to spread large quantities of salt in places where some serious crime had been committed. While it is evident, therefore, that common salt has been used by Old World farmers both as a fertilizer and as a soil sterilizer, they did not understand how it acted in either case. In fact, the more enlightened farmers of the present day find it difficult to account for the contradictory results obtained from the use of salt. In order to understand the effect of salt on land, one should make an effort to find out what chemical or other changes are produced in the soil when salt is applied to it. The results themselves will depend on the soil, on the crop and on the methods of application. In the case of very heavy soils, small application of salt will tend to granulate the soil material and to make the soil texture more open and mellow in character. Salt will also have a tendency to hasten the decomposition of cer-

tain soil minerals, particularly those containing potash, lime and magnesia. Similarly, small quantities of salt will stimulate the activities of soil bacteria and, in this manner, cause the formation of larger quantities of ammonia and of nitrates. On the other hand, larger quantities of salt may injure the crop directly or indirectly thru the chemical changes produced in the soil.

There are crops which seem to be favored in their growth by fairly large applications of common salt. Mangels and asparagus, and, to a lesser extent, flax, cabbage, turnips, etc., seem to react favorably to applications of common salt up to several hundred pounds per acre. Asparagus in particular seems to be able to stand large applications of salt that would unquestionably prove very injurious under the same conditions to other crops. This fact was brought out strikingly in the vicinity of Riverton, Burlington County, New Jersey, in the summer and fall of 1920. The entomologists at the Riverton laboratory, in their attempt to check the spread of the Japanese beetle, applied large quantities of common salt along the roadsides for the purpose of destroying roadside vegetation. The applications were at the rate of two tons of common salt per acre, and in some places the application was repeated so that the total quantity used was at the rate of four tons per acre. Most of the vegetation along the roadsides was destroyed by the application of two tons of salt per acre. It was evident, however, that this quantity of salt did not cause serious damage to volunteer asparagus which grows in abundance along the roadsides in that region.

It has been observed, likewise, that common salt may affect the quality as well as the quantity of the crop. In the case of potatoes, larger

applications of salt seem to make the tubers less mealy. Similarly, in the case of sugar beets, applications of several hundred pounds of salt per acre will reduce the proportion of crystallizable sugar in the juice. For this reason, there is an objection to salt itself or to other fertilizers containing large proportions of common salt for crops like potatoes, sugar beets and tobacco. Muriate of potash will produce a similar effect on these crops and for this reason, sulfate of potash is often preferred by potato, sugar beet and tobacco growers who practice intensive methods of fertilization.

While common salt is not in itself a direct fertilizer, it can be so used as to help increase the supply of available food to growing crops. When used in amounts of 150 pounds per acre, or less, common salt will often help the crops to secure a more ample supply of potash from the soil. This is true also of nitrogen and of phosphoric acid, but to a lesser extent. It is probable, however, that salt may be used most effectively together with farmyard manure. Farmers of 50 or 75 years ago not infrequently added salt to the manure before hauling and spreading it on the sod land. They firmly believed that salt increased the returns from the manure. It is not unlikely that this practice may be revived with profit even in this day of commercial fertilizers. Additions of common salt at the rate of 5 or 10 pounds per ton of manure are likely to improve the quality of the latter and to lead to larger crop yields. In a word, while common salt is not a direct fertilizer, it can be so applied as to increase the availability of certain of the plant-food constituents in the soil. It can also be used for mixing with farmyard manure, thereby making the latter a more efficient fertilizer.

Why the East Failed to Get Any Blue Ribbons

An Observing Visitor to the "International" Describes Winning Qualities in Corn

By A. D. Radebaugh, Maryland

CAN YOU imagine yourself and four other men having nearly three thousand entries of corn (ten ear and single ear exhibits), wheat, oats, barley and rye staring you in the face and have to tell the exhibitors and on-lookers which is the best sample in each case and on down to fiftieth place without a single mistake in placing? This is what really happened at the International Grain and Hay Show in Chicago Nov. 27th to Dec. 4th, 1920.

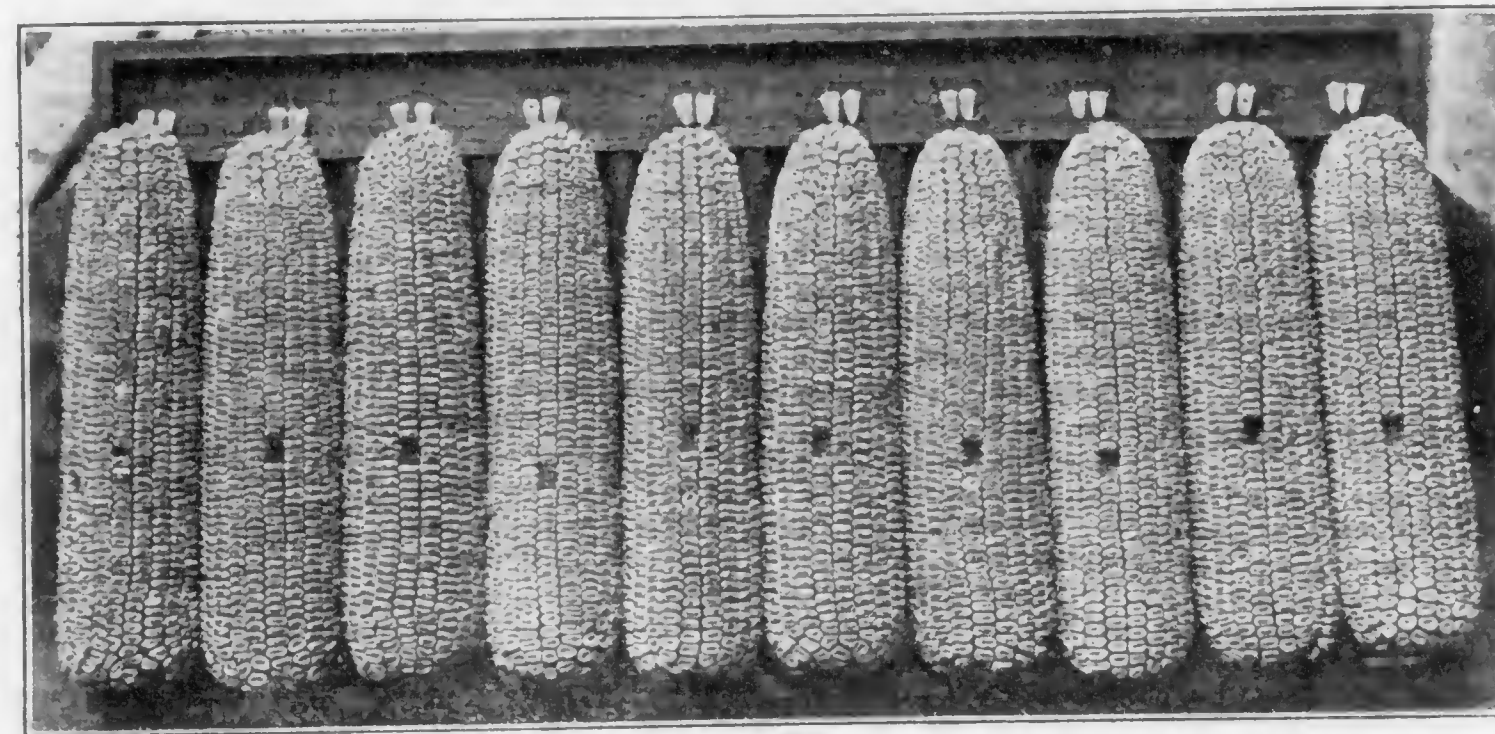
As one interested in this work, and because of the wonderful benefits derived from attending this show, I will endeavor to give Pennsylvania Farmer readers an idea of what is necessary to be one of the few prize winners.

First, we must know what are the essential points to make an exhibit attractive enough to catch the judges' eyes and hold them fast on the exhibit until the final decisions are rendered. These points I am going to discuss as I noted the judges in their work of placing the samples.

- First. Attractiveness of exhibit.
- Second. Uniformity of exhibit.
- Third. Market condition of exhibit.
- Fourth. Points of perfection in exhibit.
- Fifth. Adaptability of exhibit to region where grown.

Attractiveness of Display

The old saying, "The first impression is the most lasting," seems to apply here better than any other I can think of. By attractiveness of display I mean placing each ear, if it be corn, so it will show its imperfections least. Place the



Grand Champion 10-Ears at International Hay and Grain Show, Chicago, 1920. Grown and Exhibited by C. E. Troyer, Indiana

ear according to length and color so one will not bring out the defects of another, but will help to cover the defects and bring to the front the strong points of each individual ear. This may seem to some readers as though I advise being deceitful to the judges but one who has tried to pick show corn will realize the perfect ear of corn has never as yet been produced and we can pick only those as nearly perfect as possible, and arrange each ear to show off to its best advantage. As a corn judge and breeder I can safely say this is what even the judges look for the exhibitor to do.

Uniformity of Exhibit

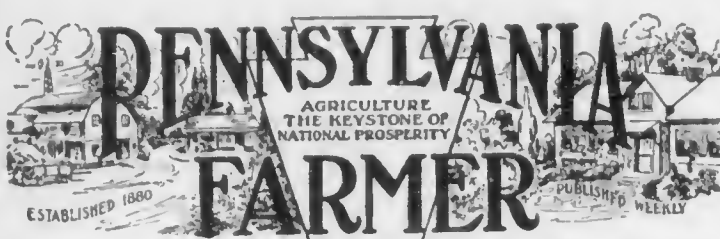
Uniformity of exhibit is where more real work can be spent to make an exhibit a prize-winner than any other factor. Now, to cover a few points noted in particular from the judges. Each ear of corn should contain twenty rows, no more or less. The length of variation should never be greater than one-half inch and the best exhibits at this show did not have over one quarter-inch variation. The color shades of the exhibit

should be regular. Do not have deep yellow and light yellow ears in the same sample. Uniformity of color counts a great deal. This applies more to yellow than to white corn. Also be careful of the starch content of each ear. One starchy ear in a sample, even though it may be a wonderfully well shaped ear, will be very apt to eliminate your sample from the winnings. I noted the western judges are far more opposed to starchy

corn than the judges in the east as this has been studied by them and even the farmers lay great stress on corn not being starchy, when picking for seed and show. The question of smooth or rough types of corn seems to still be open for argument, and the judges themselves do not agree. The corn growers of Indiana and Missouri where the growing season is long, prefer a large, rough type of corn, the ears being from ten one-quarter to eleven inches long, while the Ohio, Illinois and Iowa growers prefer a medium smooth type, with ears nine and three-quarters to ten and one-quarter inches long. Therefore, the exhibitor having ears about ten to ten one-quarter inches in length, and medium rough grain, is apt to receive the support of all, as a compromise is always necessary before finally placing samples.

Much good can be gotten from a careful study of the Grand Sweepstakes sample. These ears were from ten to ten one-quarter inches in length, contained twenty rows each, and were medium rough in grain. The kernels pulled clean and each one contained large germ and showed a

(Continued on Page 17).



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OUR JOB is to serve our readers. Whenever you are puzzled, write to us and we will help you if we can.
—The Editors.

Honestly First, Then Courage, Then Brains.
—Theodore Roosevelt!

Farm Products Show

THE PRODUCTS SHOW which will be held next week at Harrisburg promises to be the biggest thing of its kind ever held in the state. It will, no doubt, be well worth while for farmers— young and old, male and female—to make any reasonable sacrifice to attend. In addition to the usual line of exhibits, the blue-bloods of Pennsylvania's cattle will be exhibited. They will include the blue ribbon winners at the International Cattle Show held at Chicago, and will offer the first opportunity for visitors to see high-bred cattle at a Products Show. Every visitor to the Show should become a booster for a State Fair in which the agriculture of the state would have a better chance to be displayed both as to space and season.

Daylight Saving Bills Again

THERE is little doubt but that the old fight over daylight saving bills will be staged in Pennsylvania, New York and New Jersey Legislatures this winter. This is one subject upon which there is a very definite disagreement between the people of the cities and those of the farms. The division of sentiment arises out of the difference in working practices in city and country. The universal eight-hour and nine-hour day of the cities and towns makes it not only possible but desirable in most instances to practice daylight saving during the summer season. On the farms the situation is just reversed. From necessity farmers must work "from sun to sun." It is not only an economic necessity, but the very nature of their work makes the standard day better suited to farm work. Under the daylight saving plan, farmers in many lines of work lose an hour at each end of the day and save time no place, so that the term is a double-barreled misnomer.

Government and Business

THERE is a bit of unconscious humor in the action of the National Grange which, after it quoted and approved the cryptic saying, "Less government in business in government," turned around and demanded that the government do several specific things. There has been a very general demand on the part of the public that the government shall not engage in competitive business enterprises, and this general public sentiment has been construed by many people who wish

Pennsylvania Farmer

to be "left severely alone" to mean that the government (the people) shall not have any control over the rates, prices and methods of "Big Business." There is a danger just at this time when reactionary sentiment is uppermost that we will lose what was gained before the war. The demands from every quarter for "relief," "freedom" and "unmolested opportunity" are most insistent and present signs indicate a tendency to grant a greater degree of special privilege than formerly existed. It is because of this danger that we oppose the farmers' asking or accepting special favors and class privileges at this time. It is not enough that a governmental policy apply equally to all classes; all policies, to be acceptable, should be economically sound and morally just. The world war interrupted the upward movement in government and governmental regulation in this country, but the reconstruction period provides an opportunity for taking backward steps which certain interests are not slow to embrace. Farmers, look out for baited traps.

Wanted: A World-Trade Policy

This Country Must Continue to Export Farm Products if Agriculture is to Prosper

IF THE INDUSTRIES of this country are to be run to capacity it is necessary that our national policies be such that we can hold a large part of the world's trade which we secured during the war. Every one of our great national industries is capable of producing more than can be absorbed among ourselves. In spite of this fact, there seems to be prevalent just at this time a desire to detach ourselves from the world's trade by demanding wages and prices which make it next to impossible to do business with other countries. Of course, there is the unfortunate condition of exchange rates, but that will gradually improve in most instances and it will be shortsighted on our part if, for the sake of temporary gain, we lose our export trade.

Just how much farm prosperity depends upon a foreign market is strikingly illustrated by a comparison of the present prices of farm produce with those of two and three years ago when we were feeding a large part of the world. At the conference of Governors held at Harrisburg a few weeks ago the farmers' condition was pronounced "acute," "alarming" and "tragic." Farmers' organizations everywhere have been discussing this question almost to the exclusion of every other. Congress has given it more attention the past month than anything else, but, unfortunately, nothing of a broad, constructive nature has yet been proposed. The only thing suggested is the exclusion of food products from other countries, seemingly forgetting that that policy alone will, if it does what it is hoped it will, set a price which will make the exportation of food from this country impossible. We agree with others that farmers should have the same consideration in setting tariff schedules as other industries, but our criticism is of the future national policy, or lack of it.

The American farms are big enough and rich enough, and American farmers are capable of operating them so that we can feed not only our own people but millions more, and it is essential to the prosperity of agriculture that a steady stream of products be kept flowing to foreign markets. If this stream stops, farmers must reduce production or the market in every line of production will be continually over-supplied, with consequent low prices.

During the last ten years our agricultural products furnished an average of 46 per cent of our total exports. During the war the proportion ran as high as 55 per cent. Yet in spite of this large exportation, and even with the handicap of help shortage, under which American farmers labored, they were able to produce it and keep America well fed at the same time. The necessity for a continuation of export trade is self-evident. A meeting of the National Foreign Trade Council, of which James A. Farrel, President of the U. S. Steel Corporation is chairman, will be held in Cleveland next May and it is likely that the question of agricultural exports will be given equal consideration with other lines.

In the meantime, let us see that we do not adopt a policy that will make a revival of foreign trade impossible. We will be creating nothing short of a 1903 paradise if we, for the sake of

continuing war-time investment income, wages and prices, drop out of the world's trade, hoping to continue our prosperity simply by trading among our own people. Our financiers and statesmen have an unequalled opportunity to prove their ability in working out a plan by which we may safely and profitably help European nations to recuperate and keep on buying their necessities from this country.

The consular service of a country is an important factor in the development of trade in foreign countries. Many other nations make a special point of developing and training competent men for this work so that when they are appointed to a country they are able to develop business for their native country. Unfortunately, the consular service in this country is merely a political plum tree and the posts are too often filled by men who are appointed as a reward for partisan service instead of fitness for the position. The greater part of the normal trade of this country has been developed by private enterprise with all too little help from the consuls. It is an opportune time to agitate the formation of a new basis for our consular service.

Our Washington Letter

Co-operative marketing, farm cost accounting and farm efficiency were among the outstanding subjects discussed at the eleventh annual meeting of the American Farm Economics Association held in Washington during the week ending January 1, 1921.

In his address on "The adjustment of the Farm Business to Declining Price Levels," Dr. H. C. Taylor, of the office of Farm Management of the Department of Agriculture, quoted history showing that war is always followed by high prices, and then a disastrous slump. He said that in the main the sudden collapse in farm prices was due to under consumption rather than over production. In the present instance, however, the cost of living on the farms remains relatively high. In regard to the question, "What can farmers do to curtail expense," Dr. Taylor suggested that every farmer will find it to his interest to repair old machinery. They should co-operate in putting their machinery into shape and in use of machinery.

The economic and legal status of collective bargaining was discussed by C. Morrill of the Bureau of Markets, who said that when the Sherman anti-trust measure was before Congress back in 1890 the need of exempting farmers from the provisions of the bill was discussed and an amendment to that effect added to the bill. When the bill was passed, however, the amendment had disappeared. He argued that the Volstead collective bargaining bill, as it was passed in Congress, does not permit the federation of farmers' co-operative associations under a central sales organization. The bill in effect seems to give additional jurisdiction to another agency of government to investigate and regulate co-operative marketing associations; but it does not take away anything from the Department of Justice in anti-trust law enforcement. As federations of marketing associations do not come under the Volstead bill they go back to the Sherman anti-trust law.

Mr. Morrill said he did not look upon the Volstead bill in its present form as accomplishing a great deal of what the people are looking for.

Ashur Hobson, of Columbia University, in discussing the fundamentals of co-operative marketing, said he believed that success in marketing co-operation will come thru efficiency rather than elimination of private profits. Co-operation which does no more than eliminate private profits is on the high road to starvation. The success of farmers co-operatives depends upon their ability to furnish a continuous supply of standard products.

The necessity of having along side the marketing association an educational movement was emphasized by Charles A. Lyman, of the National Board of Farm Organizations. In regard to farm legislation Mr. Lyman said it took a year to get the Volstead bill thru Congress. Months were required to get it out of the committee, then it came out in a form which nullified its effective provisions, and it is rumored that it is due for a veto.

Some interesting facts and figures on farm tenancy were given by Professor B. H. Hubbard of Wisconsin University. Tenancy is much more prevalent in regions of high priced farm lands than in sections where the prices of farm land are low. In Ohio there has been a decided decline in tenancy in twenty years, according to the 1920 census. In the North Atlantic states farm tenancy has decreased since 1910, while in Iowa it has increased slightly. It is evident, concludes Dr. Hubbard, that farm tenancy and ownership have reached a balance, with no prospect of a landed aristocracy.

"Propaganda cost accounting," was the way

Dr. Durand characterized the system coming into quite common use. "I am a great believer in cost accounting, but cost accounting in this country is in danger of being a mere tool of the propagandist. Things are getting to the pass where cost accounting might almost be defined as the science of making the public think you need a higher price."

"If a propagandist wishes to prove that the farmers need a higher price for a product, it is easy to do so; but if he colors the cost too high the result may be to turn many farmers from producing that product though it may actually be relatively a very profitable one. Another possible result is that the public will fail to believe, and the last state of the farmer will be worse than the first. * * * There is a tendency in propaganda cost accounting to try to get all the items in that will make the price seem reasonable, or keep it from going down."—Elmer E. Reynolds.

HARRISBURG LETTER

An Expectant Legislature.—The members of the general assembly of Pennsylvania having demonstrated that they could organize a biennial session in unprecedented harmony are now awaiting the legislative program with considerable interest. It is doubtful if in years so many members have arranged to keep bills in their inside pockets until they see what is coming from the Governor's office. Various commissions and committees have been meeting and have prepared drafts of measures which will be laid before the Executive and the heads of departments are waiting to talk over their plans. The Governor has determined upon the plan of personally addressing the two houses instead of sending in a message which is printed and to which no one reads when it is read. He takes the position that a personal address makes a better impression and that delivery after the recess is more opportune than at the start. There is no question but what he is right and as far as the precedents go Spruill was a legislator so long that he feels at home with the members and they with him. The Governor will outline his ideas on educational allowances, taxation, liquor, reapportionment, highways and public works.

Going to be Short.—Notwithstanding the misgivings which prevented the formal fixing of April 28 as the date for adjournment when the lawmakers met, a sort of understanding to quit that day was reached. It is subject to change and during the recess the opinion has been freely voiced that the session is to be ended before May and that things will go with a rush. By steady work the Legislature can finish easily in April, but it cannot do so by adjourning at the close of two days' work each week and allowing a racket in Philadelphia or Pittsburgh or some up-state boss's aggrieved feelings over apportionment to drag out the sittings.

Some Big Things.—The biggest proposition of the session is, how much additional money is to be voted for the schools? Some of the lawmakers declared in favor of at least \$20,000,000 and both President pro-tem Frank E. Baldwin, and Speaker Robert S. Spangler are inclined to be liberal in regard to education, but if that \$20,000,000 is given it means a tremendous chop either in state governmental or hospital appropriations or the alternative of new taxes. Much is being said in high quarters about new taxes, but they mean a fight and a fight with the federal patronage not yet given out might turn out to be one-sided. And as for reducing the state payroll, that is about as likely as adoption of a wholesale policy in regard to charitable appropriations. Then there is the question of money for highway building for two more years and the \$2,500,000 which is needed to start a real forestry program. The state may have \$120,000,000 to appropriate, but it will have to be thinner in spots than some people now realize.

Control of Firearms.—The time seems to be coming when in addition to stiff sentences for persons who turn to banditry there will be a system of registering sales of firearms just as druggists register poison sales. It is also suggested persons be required to demonstrate fitness to have

Pennsylvania Farmer

firearms. As there are questions every now and then about the fitness of some people to run automobiles which are more dangerous than shotguns in the hands of some individuals it would seem legislative clarity would have to be invoked.

Up to the State.—The net result of the conferences in regard to milk standards is that the State will establish rules to carry out provisions for the certified, pasteurized and grade A milk. The Department of Health will make some suggestions and the fight will be carried into the House of Representatives. The temperature problem seems as great as ever. And it will be until an agreement on decrees that all will support is reached.

State to Buy Few More.—The State of Pennsylvania will not buy many more toll roads. Under rulings made state money will be used only for purchase of toll roads on state highways and there are but one or two left that are worth while. But there are still many toll roads on township highways that are a cause of complaint and which counties must purchase. Lancaster, for instance, has over sixty miles of toll road.—Hamilton, Harrisburg.

NEW YORK LETTER

Cattle Prices.—At the first day of the ninth consignment sale of purchased Holstein cattle in Liverpool the average price received for 70 head was but \$125, a very low figure considering the quality. Dairy stock sold for beef brings about \$15 to \$20. Even veal calves have dropped to a low figure.

Bigger Milk Drop Forecast.—The Jefferson County dairymen expect a further drop in milk prices in February of a few cents a hundred. Cheese factories of northern counties are running at a minimum and these dairymen believe the problem of cheese and butter manufacture so different from liquid milk sale and distribution that it demands a separate management. League officials, however, believe that one management, wherein each line of work is made to supplement the other, with a division of sales pro rata, will be best for both interests.

Pooling Plan Extends.—During the past few days Dairymen's League officials have been pushing the pooling plan very vigorously, with splendid results. If only an average of 10 new signatures from each local branch in the state is received the needed number will be obtained. Over 30,800 on hand with 5,000 in transit, and the greatest handicap now being in the limited number of signers available to explain conditions. The 15,000 additional signatures will be a matter of but a few days, it is thought. The tripling of the sums to be spent in advertising milk as a food in the East the coming year is expected to do much towards easing up the dairy situation.

New State Administration.—Governor Miller's inaugural address sounds a new keynote in administrative circles, that of conducting the government for the benefit of those who pay taxes instead of those who spend them.

Co-operative Development.—It is shown that Michigan potatoes are sold in New York State markets and New York potatoes sold in St. Louis, with the consumers paying the freight. Co-operative marketing organizations will correct such evils. They are developing so rapidly in this state that the next problem to consider is the relation of these organizations to each other. The G. L. F. Exchange is expected to assemble much of the products to be sold, and to unite and harmonize all such efforts. It has organized units in some 20 counties now, and is growing fast.

Working for Big National Event.—S. A. Vandervort of Sydney is entrusted with securing outstanding state animals to enter in the big sale at the annual meeting of the National Holstein-Friesian Association in Syracuse in June. The meeting is expected to be an even bigger event than the St. Paul meeting was last June.

Standards for Table Potatoes.—Representatives of all the potato sections of the state recently met in Syracuse to establish standards for grading potatoes and to establish local selling organizations.

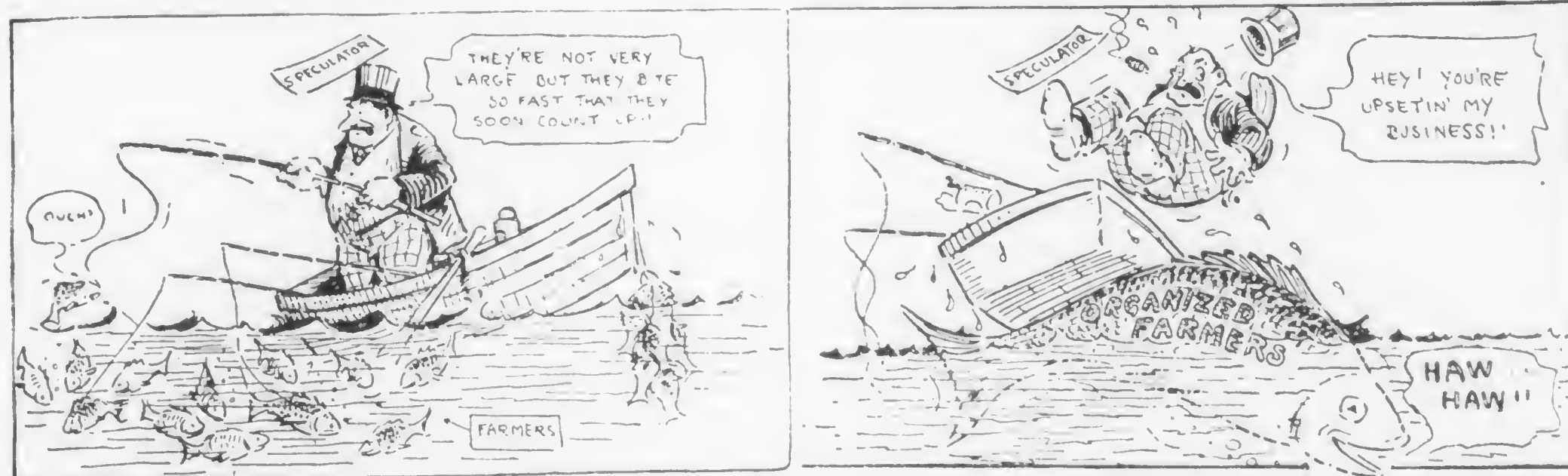
Regional committees will be appointed to develop such selling organizations. There are now 23 local organizations functioning successfully. These will be used as a nucleus for forming other new ones. Warehouse facilities will be provided, so that fall overcrowding of markets will be avoided.
—M. G. F.

NEW JERSEY NEWS

Jersey Legislature Opens.—The one hundred and forty-fifth session of the New Jersey Legislature convened on Tuesday. Collins B. Allen, former Senate floor leader and prominent Republican, of Salem, is president of the Upper House, while William B. Mackay, of Bergen, is majority leader in the Senate. George S. Hobart, of Essex, is Speaker of the House, while T. Harry Rowland, of Camden, is House Majority Leader. There are fifteen Republicans in the Senate and six Democrats, while in the House there are fifty-eight Republicans—two of whom are women—and one Democrat, who comes from the agricultural constituency of Warren. One of the Hudson Republican delegation died since election, thus reducing the majority to the number named. The Republicans have a majority of nine in the Senate and 57 in the House, while the Republican majority on joint ballot in the entire Legislature is 67. One of the measures of a party character and proposed by the women wing of the Republican party provides for women sitting on juries as well as serving as presidential electors, while others place two women on the State Board of Education and State Board of Health. Party bills presented this week provide means for the financing of the bridge from Camden to Philadelphia and the tunnel from Jersey City to New York. A measure enabling the State Bureau of Markets to show to the consumers of produce in the state what the prevailing prices should be was also introduced. The prevention of raising of foxes in New Jersey in order that farm crops will not be damaged or destroyed by these animals is now almost ready for introduction. In his message to the Legislature, Governor Edwards urged that that body refuse to enact any legislation that would revive the old "Blue Laws" or strengthen them, and that he believed it to be to the advantage of the churches that such legislation should not prevail. He suggested the creation of a special committee from both the Senate and House to confer with him, so that there will be presented to the present Legislature some concrete program that will take into account the necessity for good roads, requirements of state institutions and agencies, etc. In regard to taxation, Governor Edwards stated that "the practical problem of taxation now confronting us is the problem of so making our tax levies, that all property subject to taxation shall contribute to the support of government precisely in proportion to such property. In respect to motor vehicle license fees, Governor Edwards said that "experience of the past few years demonstrates that the receipts from motor vehicle fees have not been sufficient to keep pace with the maintenance needs of the highway system and of county roads. The reason therefore seems to be the destructive effect of the modern motor vehicle—both pleasure and business. There are two remedies—one to limit the weight of motor vehicles and load to a minimum of twenty-eight thousand pounds, and the other, to increase the amount of the revenues. He suggested modification of the labor laws of New Jersey, so as to provide for women an eight-hour day, a forty-eight hour week, and the prohibition of night work for women employed in manufacturing after ten o'clock at night and six o'clock in the morning. Speaking of a revision of the criminal laws, the Governor stated that "my constitutional duty, as a member of the Court of Pardons, has brought me into such close relation with the operation of the criminal laws, that I feel impelled to suggest the necessity of appointing at an early date a commission to revise and codify such laws." He suggested the passage of bills that would ameliorate the condition of labor.

—Kelly, Trenton.

The announcement that "the government will prosecute coal profiteers" is one of those things that comes under the category tersely described as "interesting, if true."



He Forgot That Little Fish Sometimes Grow to be Big Fish



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YOU can easily rebuild your old broken-down stave silo into a new, permanent Crabine—the hand-somest, strongest silo made—and save half the cost of a new silo. The Crabine is a great economy because its moderate first cost is its only cost for many years. The inner wall is of upright staves, closely fitted. Then comes a wall of Silafelt—waterproof, air-proof, frost-fighting. Outside is the spiral smooth-finish Crainelox covering that winds to the top—protecting and reinforcing every square inch. No hoops, no repairs—your silage is better, your investment is safer, your work and anxiety are reduced.

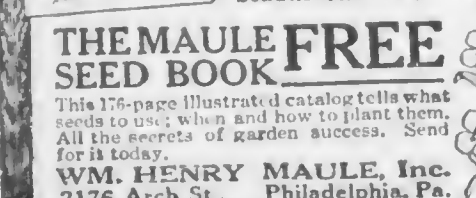
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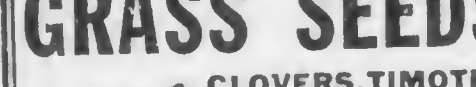
It will show you how to produce large, healthy, vegetable crops—how to have beautiful flowers.



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\$44 Barn the New Butterfly Jr. No. 215
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TRACTOR EXPERIENCES

(Continued from Page Two).
recovered at once and we had the heaviest crop up to this time. In another plot of 200 trees we had rye that was in head, and blackberry canes on the tree rows. You all know what this would mean with a long plow. This was cut both ways with a disc and then plowed as smooth as a garden. Next came the old strawberry bed. Here is one of the most difficult pieces to get in shape after tramping over in picking, also having weeds, and coarse manure used for the winter mulch. This was gone over both ways with the disc and then plowed. Then disced again both ways. And behold, the finest prepared piece of land you ever saw. Fine in the bottom to allow capillary attraction to furnish the moisture, and plowed deeper than ever before. All done with the tractor.

Another operation that made us money and saved time was the raising of three trees that went down under their load of fruit. In one hour we did what would have taken several days and much hard work. Of course, I understand it would not pay to buy a tractor to pull up a few trees, but this is only one of the many instances in which it performed the unusual job.

Another piece of work that we could not have done without the tractor outfit was the re-seeding of a worn-out meadow of three acres. We cleared an acre of woodland to this, cutting down the large trees and pulling the smaller; the briars were disced into the soil. All was covered with manure and ground limestone. This was worked into the soil by going over it three times and then seeded to grass. A cleaner, better looking piece of work was never done on such land.

In seeding corn ground the tractor outfit is something marvelous. Parts of our corn were so weedy that it would have been necessary to mow, rake and burn the weeds before preparing the soil for the grain. We cut two rows of corn where we wanted the shocks and threw it to the side. This was seeded with the drill and the boots fastened up. Then the disc was run over it, cutting the trash and covering the grain. When corn was cut, the operation was repeated between the shock rows. All the weeds and many of the stubble had disappeared and were in the soil supplying the much-needed humus instead of having to be hauled off and burned.

Another place we worked to advantage was in clearings in which the stumps had not all been removed. With these cut low we seed to buckwheat or rye and work into the ground with the disc, going over the top of the stumps. Later in the season a sawmill was added to the equipment and now we are sawing lumber for needed repairs as well as for sale.

As to cost of operation, we find that the plows and the saw-mill require the most fuel—we use all gasoline. It takes 12 gallons of gasoline per day and one quart of oil. So far, no repairs have been needed; have had no trouble, and it starts readily in cold weather. To date we have done 45 hours field work at a cost of \$17.93, or 40c per hour. This allows nothing for upkeep nor depreciation, only actual expenses. Forty-five hours seem a short time for operation, but remember we bought after the spring work was done, and we put little seeding out. Neither does this take into account of the time spent on odd jobs on the place,

such as cutting fodder, sawing wood for home use and market, grinding, pulling the sprayer, etc. All this may sound like a small affair, but I said in the beginning I would give our experience, not what we imagined we did. It seems to me we farmers want each other's experience, rather than the high flown theories, and flowery language of those whose hands have never been soiled, nor trousers torn by bumping up against real farm conditions.

What is my judgment after a summer's trial? I honestly believe that the large farmer with the proper conditions, cannot, I say cannot, afford to do without an outfit, providing he gets a good disc and a tractor that will not pack and which will do what is claimed for it. About the small farmer? Well, he had better go slow unless he has plenty of money and wants to experiment. Were it not for three things we could not afford to have an outfit, looking at it from the practical side, also the economical. Our fruit first. It seems to me a suitable tractor and disc and successful fruit-growing are inseparable, especially under present day conditions. Further, in the clearing of new land it is invaluable, and then the heavy power can be utilized on the saw-mill.

Finally, study your conditions, be sure you know what you need, and then get only what you want.—Clayton F. Weaver.

GOOD VENTILATION A BOON TO STOCK

If your stable has a foul, stifling odor in the morning and if there is frost on the side walls and ceiling, then your building needs ventilation. It is not always possible to keep out all frost, but there should be very little, if any, except during the bitter cold days of winter.

Barns should have walls that are built to keep in the warmth of the stock. There should not be cracks around the doors and windows where the snow and icy blasts can blow in. It is best to use storm windows on all openings into the stable. Do not have a large stable with only a few head of stock in it. If you do not need all of the room, partition off a part of it. Even a canvas can be used for this purpose. A cow should not be required to heat more than 700 cubic feet of space; about 550 cubic feet is an average value. A horse may be expected to heat about 1000 cubic feet of space, but 700 or 800 cubic feet is a fair value.

Make sure that the air intakes are provided with shutters or dampers so that you can control the amount of air coming in. Likewise, a shutter is needed on the foul air flues to control the amount of air removed. It is a good investment to buy a thermometer for your stable. Hang it in front of the stanchions, about level with your head. The temperature of the barn should be about 32 to 40 degrees when outside temperatures are around zero to 10 below.

With the proper number of cattle or horses in it, and with the ventilators working properly, a well built barn will not be colder inside than 35 degrees even at outside temperatures of below zero.

As milk is about 88 per cent water, it stands to reason that cows must drink heavily. A few dollars invested in a tank heater to bring the water to a comfortable drinking temperature, will save a good many more dollars thru the coming winter.



Your Private Cow Doctor

If cows could tell their feelings, many a serious illness would be prevented, and constant milk losses would be saved.

Milking cows, particularly, are subject to many ailments that are first manifested only in a reduced milk yield.

Such cow ills you can treat yourself with the aid of Kow-Kare, the great cow medicine. At the first sign of reduced milk flow try Kow-Kare. Use it according to directions and watch the story the milk pail tells.

Dairymen everywhere know the value of Kow-Kare both in preventing disease, and in treating such ailments as Barrenness, Abortion, Retained Afterbirth, Scouring, Lost Appetite, Bunches.

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Write for free book, "The Home Cow Doctor."

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tomato, 11 the finest, worth 20c; Zucchini,

7 Bolognese, worth 10c; Cakes, 8 best varieties,

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A Milker

That Milks

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TRADE MARK.

OLEO LICENSES BREAK ALL RECORDS DURING PAST YEAR

The Bureau of Foods, Pennsylvania Department of Agriculture, shattered all records in the number of oleomargarine licenses issued during 1920. During the year just closed there were 6,284 licenses issued, as against 5,788 issued in 1919, which previously held all records.

There is a strong indication that 1921 will show more licenses issued than during any previous year, as more than 4,100 were issued up until New Year's Day, 1921.

Following are the tables showing the licenses issued in 1919 and 1920:

Retail	5,543
Boarding House	157
Wholesale	80
Restaurant	6
Hotel	2

Total 1920 5,788

Retail	6,049
Boarding House	145
Wholesale	83
Restaurant	6
Hotel	1

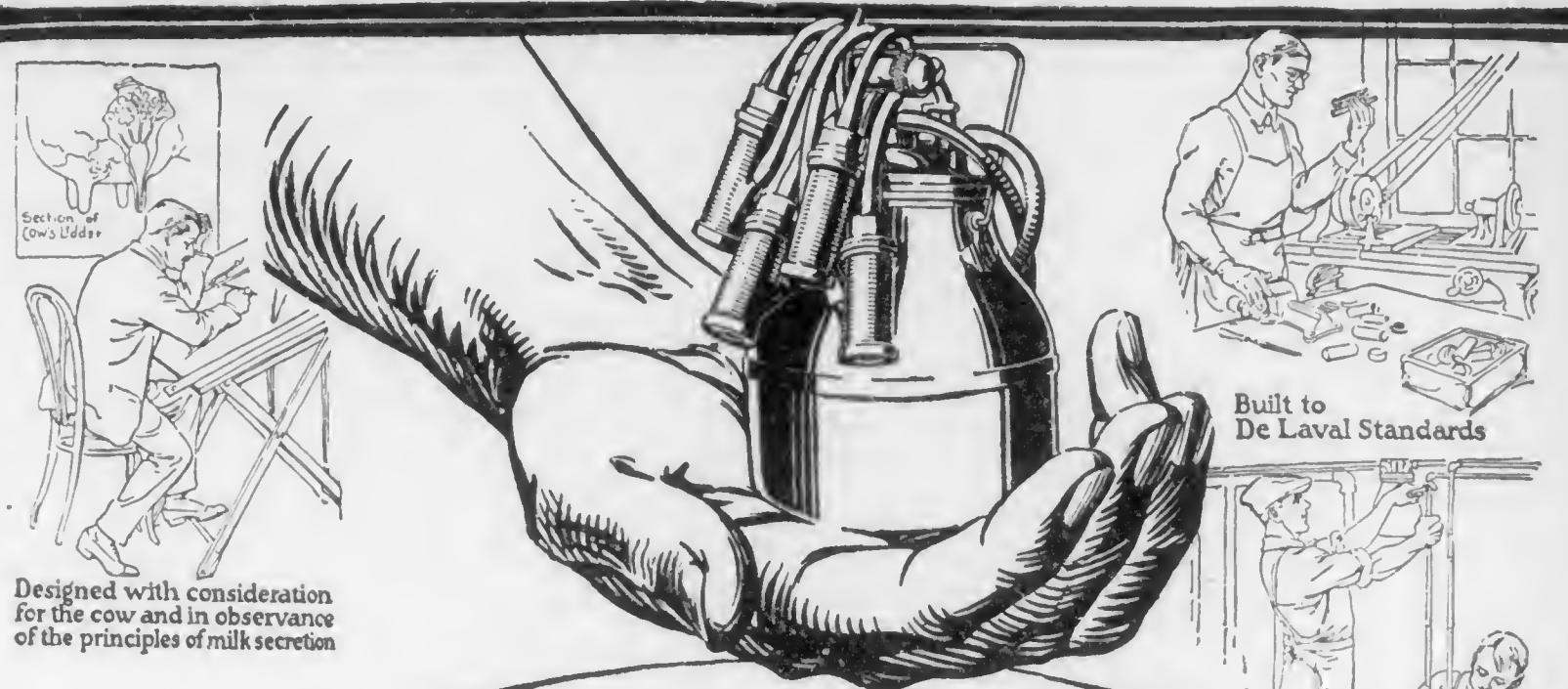
Total 1921 6,284

THE SILO A SIGN POST

The silo is a good place for a farm sign. It is the most conspicuous building on the farm. As a rule, it towers high above the other buildings, and is matched only by the windmill or a very tall tree. Any farmer who believes that it pays to advertise should seriously consider a farm sign. Get some painter who can do fairly good lettering and get him to put a sign on your silo. Go to the road in order to get the correct view. Take a view from the road in front of your barn and to right and left, then choose the most conspicuous part of the silo. This is generally found close to the top. If you are advertising the name of your farm, use the name and follow with your own if you wish. Breeders of all kinds of pure-bred stock should keep in mind the fact that advertising is a very essential feature in their success. There are continually going thru the country men looking for various breeders of livestock. Give them a chance to learn of the business you are in without looking you up in the field or calling at the door.

Occasionally the farm buildings are so situated that the "ad" should appear in more places than one. The gable of the barn or a conspicuous building so located that it can be observed for a long distance from either railroad or highway should bear the sign. As practically all silos are round, it is hard to get a view from any point that does not give a good surface for a short-to-the-point sign. For this reason the silo is the most conspicuous billboard on the farm.

However, the principal use of a silo is not in the capacity of a billboard or sign post. That is only one of its many good uses. The stock farmers without a silo is likely to need such an equipment more than he needs a sign. The fact that he has no silo is a sign in itself that he lacks the best and most economic food for his stock. All feeding experiments and tests prove this to be true, and our progressive stockkeepers are indeed "reading the signs" and recognizing the silo's value.—A. I. Haecker.



Designed with consideration for the cow and in observance of the principles of milk secretion

A Better Way of Milking

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After many years of thorough research and test, and after four years of commercial use, the De Laval Milker has proved itself to be a better way of milking.

Now the many De Laval users are practically unanimous in their agreement that it not only saves time and eliminates drudgery, but actually increases the flow of milk.

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Save money in your maple. We ship direct from the factory to you at a big saving. Orders must be received early to take advantage of these low prices. Write NOW for price list.

Shipments can be made from points in Vermont, Massachusetts, New York and Ohio.

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Sap Buckets,

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Etc. Etc.

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Toledo, Ohio



Champion Dependable Spark Plugs

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Increases Yield—Lowers Labor Cost
Pays for itself many times over. One man and team can plant 100 rows of potatoes in one day. No hand planting. Furrow opens and seed drops in plain sight. Does not require seed. Has long life, needs few repairs. Sows for 10 to 12 rows. **Protects you against uncertain labor and season. Investigate Now.**

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BUYERS CAN SAVE BIG MONEY NOW

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Men Wanted to sell dependable fruit trees and shrubs. Big demand. Complete co-operation. Commission paid weekly. Write for terms.
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HORTICULTURE

A Call for Co-operation

By Dr. J. P. STEWART

READERS of the horticultural section of the Pennsylvania Farmer have doubtless noticed that we have been pegging away for several years in an effort to give them the benefit of any improvements or helpful suggestions that came to our attention along fruit-growing lines. We have also called for opinions, experiences, suggestions or criticisms from our readers from time to time, and have received some very valuable items in this way, but as a rule the responses were conspicuous by their absence, or in any event they were much too few, so that we had to lapse into the usual one-sided monologue, without knowing whether our discussion was really reaching its goal and assisting in meeting any one's actual problems or not.

This course can still be pursued, but we would rather not have to do it, if it can be avoided. It would be so much better, and would put so much more life into the proceedings, if we could simply have an idea of what is on the other fellow's mind, what his real problem is, how he has solved it or tried to solve it, and where additional help may be needed. We do not make any promises to furnish immediate solutions to the multitude of problems that may beset the fruit-grower at the present time, but we will be glad to lend a hand where we can, and to pass on the striking successes or unsolved problems of our readers, to the balance of our circles where the greatest good may be secured. In other words, during the coming months we shall be especially glad to have the full co-operation of our readers in getting only the liveliest matter into this column, and also the matter in which they are now most vitally interested.

If therefore you have been able to do something out of the ordinary or have seen some one else do something in our line a little better than before—whether it be in getting out the borers, making or applying sprays, or in beating the general slump in prices—let the balance of us hear about it, together with any queries about matters that you may also desire some assistance on, and the proper steps will be taken to make the most possible out of it. It is said that adversity or necessity is the mother of invention. In that case, we ought to have a lot of new schemes or revision of old ones cropping out in the fruit-growing profession that would be of interest to all of us.

Quantity of Fruit in Cold Storage

Those who still have apples to sell will be interested in the recent report to the effect that the quantity of apples in cold storage on December first was greater than in any recent year, being the equivalent of 6,748,362 barrels as against 5,922,879 barrels a year ago. This looks like a big increase, but as a matter of fact it is only about 14 per cent more fruit than last year, while the decrease in price to the producer is fully 40 to 50 per cent. This decrease in price should be ample to move the relatively small increase in supply, if it were not for the fact that the peculiar state of mind which is largely responsible for the general slump in other lines were not also in full operation in the fruit market.

In other words, the general public has become thoroughly saturated with the idea that there is now a big surplus of everything, together with a limited amount of credit at the disposal of the holders, so that whatever they want is likely to be lower, hence why should they be in a hurry about buying? This of course does not apply in full to a perishable product like fruit, but until the present general impression is corrected, we can expect a very slow movement of fruit even at the greatly reduced levels.

If the decided value of fruit in lightening the average, too-heavy diet were fully realized, there would be no question whatever about the farmers in his neighborhood that the grain farmers were offering as high as \$4 a day and board for corn cutters and huskers, one of these men decided

that something drastic had to be done. He therefore cleared up his extensive packing house for the temporary storage of picked fruit, coopered up his barrels, set a price of 40 cents a barrel for picking, and centered all activities on the picking until it was out of the way, after which he took up the packing and grading of his fruit at comparative leisure.

Incidentally, he left the fruit out over night in most cases, so as to get the benefit of the cooler air and also to give the force suitable employment in the early mornings when it was frequently too dewy or foggy to pick without injuring the looks and "finish" of the fruit. In this way he had no trouble at all in securing an ample force to get all his apples picked and under cover before any serious frost occurred.

The other grower, with a still larger acreage, had adopted the plan of pitching camp right in his orchards, where he furnishes both eating and sleeping accommodations for all the men desired during the entire period. With the aid of a little judicious advertising he then gets the men in from all directions, and keeps most of them there until he is done with his job. This year he paid \$3 to \$3.50 a day and board, for most of his men, and also maintained a lecturer and a movie show about three times a week for their benefit. The cooks are real specialists in their lines, and altogether everybody seemed to be satisfied, even under the general conditions obtaining this fall, which is saying a lot.

Uncle Ab says: Only a lazy man wants an easy job; the hard jobs are the ones worth doing.

It's not too early to get garden and nursery catalogs for the planning of next year's fruit and garden crops.

ultimate cleaning up of all the fruit now in storage. Here is a food opportunity for all of us to serve both our own and humanity's interests, in spreading the gospel of more fruit in the diet.

GROWING RHUBARB IN THE CELLAR

The first and all important requisite for success in forcing rhubarb in the cellar is the root supply; young plants are useless to experiment with also debilitated plants as they are of no value and should be reset and allowed to form new roots. Vigorous plants only, are to be depended upon.

By attracting the attention of the gardeners, to the forcing of rhubarb, it has been my pleasure to see the work taken up and verified not only by commercial growers but by the state experiment stations as well.

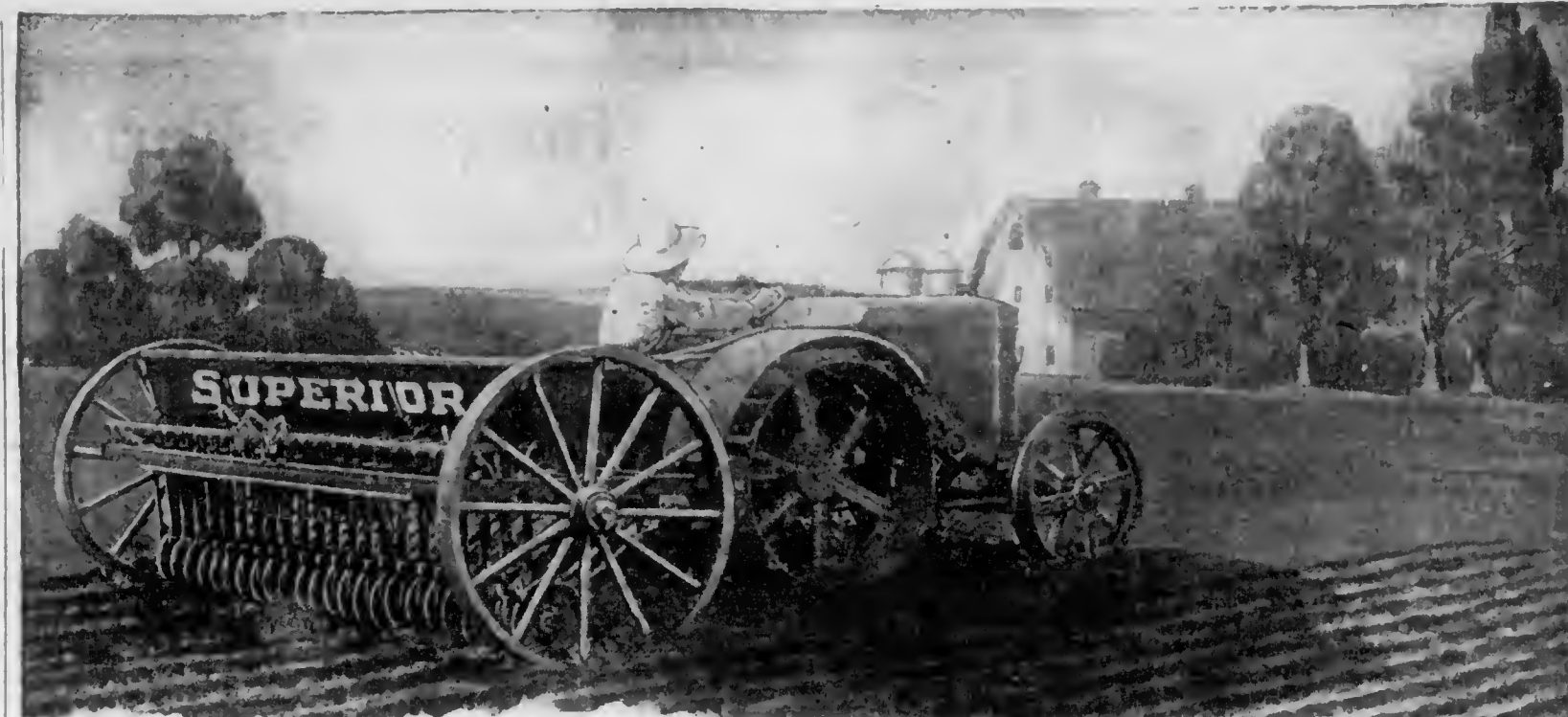
No other vegetable takes the place of the apple so often as does rhubarb, and considering the ease with which it can be grown, there is no reason why every family, either in city or country, should not have an accessible supply at all times, from January until the latter part of April as the only requirements of the forcing place are freedom from frost and absolute exclusion from daylight. This last point must be heeded as light injures the color and quality, causes crooked stalks and expands the blade of the leaf; lamps or lanterns can supply the necessary amount of heat, the globes of which have been smoked black to modify the light. The construction of the floor is immaterial, but the better plan is to cover it with from three to five inches of good soil, and set the clumps closely together, filling up the space with the same soil, if the entire surface is covered, only enough should be used to level the top, which makes watering easier.

Rhubarb in the forcing house will stand any temperature from freezing to 98 degrees or more, and should the lights in the lamps go out and the heat run down, it will do no harm but of course a steady heat will bring the crop more quickly. Lower than sixty will cause slow growth but give stalks of good quality, while above that temperature will make rapid growth and stalks of less solidity.

A box placed by the cook stove will grow rhubarb nicely, but of course only a small amount can be grown at a time, and in this case the heat from the stove will be sufficient. The only care required will be to water occasionally and keep the roots covered from the light. Where space is limited, the stock can be replaced by fresh stock as soon as their bearing season is over. In fact, it is a good plan to take them out and store them as soon as the stalks become feeble and sprinkling for they will grow until they die. After forcing, store the roots in a cool place, and if they freeze it will do no harm, as it must be borne in mind that the roots must be solidly frozen before any attempt is made at forcing them. I hope every reader of this article will try forcing a few hills of rhubarb and see how you will like it, as well as how much money you can make.—C. A. Umosselle.

Uncle Ab says: Only a lazy man wants an easy job; the hard jobs are the ones worth doing.

It's not too early to get garden and nursery catalogs for the planning of next year's fruit and garden crops.



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PENNSYLVANIA FARMER
261 South Third St. Philadelphia.

Of Interest to Farm Women and Girls

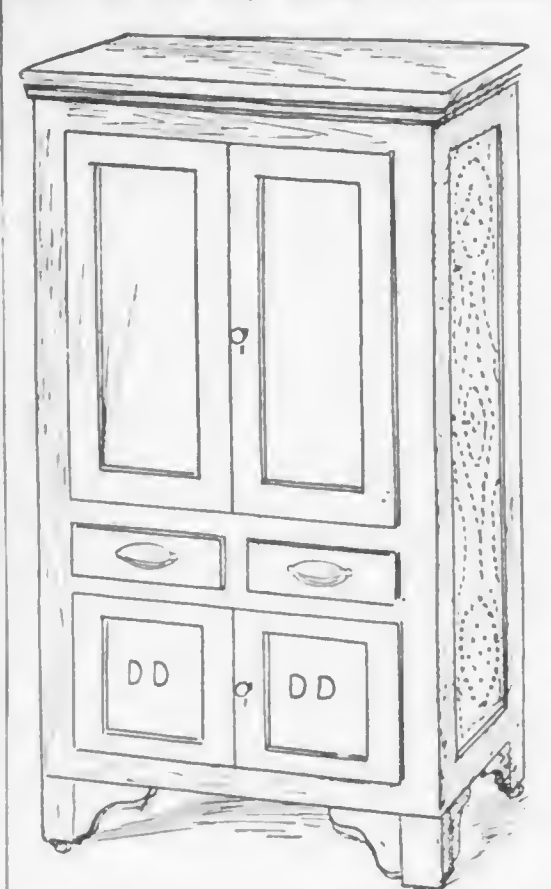
Standards for the New Year

Do not let the Hard Work and Disappointments of the Past Discourage Efforts for the Future

AS THE year 1920 recedes into the background are we satisfied with the records of its use in the farm homes of the country? What have we left to remember its passing by?

Many, in fact, most of us, must credit to 1920 unusual hardships, overwork, disappointments in rewards and other unpleasant data. Few of us have seen the long desired home improvements installed. The matter of labor scarcity alone has been a big handicap in the work of farm and home improvement.

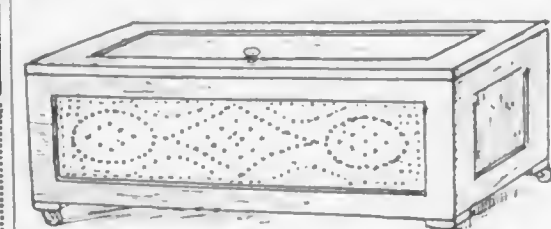
Yet shall we despair of these good things and join the posts that are marching into the cities? Perhaps the only way to get the coveted home conveniences may seem to be to remove to the city where the matter



The Old Cupboard as it Looked in Our First Home

of installing a bath room is comparatively simple with the city water mains and sewer lines in the street in front of the house.

By all means do not let us forget the many intangible rewards there are in life in the country for those who like life in the open—independence of thought and action, high thinking and clean living. "All things come to him who waits." As the city man, minus a job or laid off about two to three days a week, casts about for means of recouping, the farmer isn't so badly off as he might be, if he can only be content for a



Baby's Clothing Chest Was Made Out of the Top of the Old Cupboard

time with inconveniences and with apparent injustice in return for hard labor.

While we are sitting tight and doing our level best to strengthen and

develop all the various farm co-operative agencies in the country, to which producers and consumers alike must look for future relief from old-time haphazard-lazy-grab-as-grab-can methods of distribution of foodstuffs let us take inventory of things near at hand out of which we might derive much more real benefit and happiness.

Are we neglecting culture in the farm homes? By this I mean not the culture born of schools which is in a sad state, and which is one of the crying shames in the country today. That is a story in itself—and one that is going to be "manhandled" soon in New York state by the committee of twenty-one that is getting under way for big things in the line of rural education.

I mean the use of books, papers and magazines in the farm homes. How many really good things are to be found year in and year out on our reading tables and book shelves? Is the farmer himself getting the right help and inspiration that is to be had from the large number of farm papers that are offering him such wonderful service today? I would class this kind of reading as the most important of any for any farm family today, as it caters to the needs of every member of the family and adds to their efficiency, their health and their content and happiness.

Are there children or young folks? If so, are we giving them at least one of the several valuable magazines arranged especially for their tastes, and for the shaping of their very destinies today? If not, let us not postpone an order for some of these at the first opportunity.

Of course the thinking farmer and his wife need at least one, and better two or more good daily papers, that they may keep in touch with civic affairs, with the markets, and the affairs of the government and the world at large.

The writer's family would feel lost without one or more of the weekly and as many of the monthly magazines that are noted for wise editorial comment, on affairs of the day, for feature articles and biography, for stories of life in the great world of industry.

You say you cannot find time to read. Enough time is mispent on the average farm to make the residents on that farm well informed men and women. Mind, I do not say spent in idleness, but too often spent in a misdirected fashion. We are daily almost hourly at times, faced with the need of making a right choice as to activity.

Do we always choose aright? Which is more desirable, a house immaculate in all respects at every minute of the year round, or a mind that is well equipped and well furnished with knowledge of the best things of life?

Given no schools or colleges at all the young people of today and their elders as well can be really well educated men and women if they will make the right use of books and pa-

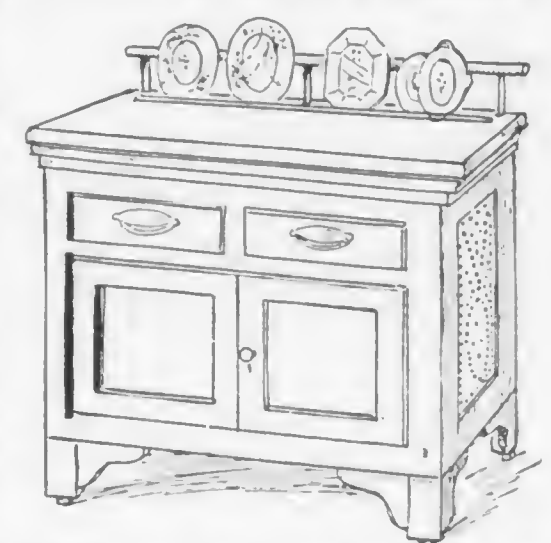
pers. I prefer to sacrifice a new coat, hat or dress on occasion to sacrificing the furnishings of my reading table, which have so much to do with the mental, moral and spiritual food for my family.

And then our friends. Farmers have gotten to thinking they can't afford to have friends, to take time to visit or confer with them; to extend the graceful little courtesies and tokens of affection that are so dear to those who have known us long. We cut short the time devoted to the making of new friends. Indeed as we grow old we find the making of new friends not so simple a matter as it has been.

As 1921 comes along with its manifold duties let us hold close our friends. Let us cherish them as one of the richest things of life—Let us turn our faces to the wall awhile and think things over. Don't let's wait until July to take inventory. We won't do it then.

This is a good time to take stock of things, to make plans for the future. If there are things to be done it is a good thing to set a time limit. Without it we are apt to see results that are disappointing.

And in our plans for the New Year do not let us forget what we owe our Creator, in time, in money, in service. Especially if there are young people in the family let us be particularly careful in the ideals we set before them. For, as a noted educator of the day says, "All the problems of the world will be settled, and there will always be someone to



The Lower Part of the Cupboard Made This Handy Buffet

come forward to do the world's work, if we make every boy and girl into the best kind of a man or a woman."

In all our plans culture or development, let us make daily study of the Bible the cornerstone. We need to be so careful what we do, what we teach. Christ says "Whosoever shall break one of the least Commandments and teach men so to do shall be called least in the Kingdom of Heaven."

—A Farm Woman.

TWO PIECES OF FURNITURE OUT OF ONE

We have from time to time seen in the household department of the Pennsylvania Farmer directions for making over things to serve in the most practical way. Now I venture to tell you what we did with an old cupboard that looked like the one illustrated.

When we were married we came to a cupboardless house, and we used this cupboard. We kept our groceries in the top portion, in which there was a shelf. In the bottom part we kept our pots and pans. This part also had one shelf. This cupboard was made of wood, with the sides perforated in some sort of a design, as illustrated. The sides were painted green, but the rest of the cupboard had a golden oak finish.

When we moved into another home which had cupboards, we did not need this old one, so husband sawed off the upper part just below the long double doors, and just above the small drawers. Then he put the top on the cupboard on the lower just above the small drawers, as you see in the second figure. Then he sawed off a broom handle so that it was just as long as the cupboard, and fitted it on, by means of three supports, to the back of this lower part of the old cupboard, thus making a rack against which I lean four nice plates. Then he sandpapered and finished the cupboard, and I have a handy and good-looking buffet for my dining-room, at very little outlay. I keep my tablecloths on the shelf behind the double doors, D. D.

Husband next took the double doors off the upper portion of the cupboard, and used them for top and bottom of the shirtwaist box shown herewith. For the front and back sides he used the perforated paneling. For the two ends of the box he used the 1-inch material from the back of the old cupboard, making it two-ply around the edges, as illustrated, in order to get the panel effect. This box was then painted with two coats of white enamel inside and out. When our little daughter was about to arrive, this dainty box became the receptacle for her little garments as they were finished, and is now referred to at our house as "baby's chest."

—Mrs. Lillian Carr, Wayne Co., Pa.

STOP! LOOK! LISTEN!

"You cannot buy back the past; no matter how much of the future you are willing to pay for it."

Did you ever write a sentence with an indelible pencil and then wish to erase it? Probably. But it cannot be done, no matter how hard you try.

So it is with life. You cannot erase the words, the acts, the deeds. Once said, once done, they are the same as the indelible sentence.

So let us all form high ideals, lofty thoughts, and act sanely and wisely. Is it not much better to look back on a past full of the acts of our "best" selves, rather than one grinning implicitly at us; tell of lack of self-control, lack of restraint, and lack of wisdom?

Stop, look and listen! when in doubt as to the better course to follow along the roadway of life. There are the two roads; one leading straight as an arrow to health and happiness; the other, a muddy, murky, rocky road leading to tired, fagged nerves and a restless conscience.

When in doubt: Stop! Take time and consider if you are undecided. Look at the prospect from all angles. Is it going to bring you any lasting peace and happiness? Or merely a transient pleasure, with no particular good for any concerned. If so, why waste your time, thought and energy? Save them for something worth while.

Look! Does the prospect loom up brightly in your mind's eye? Or does it leave a muddy, doubtful little puddle, with no gleam of sunshine? Is the "adventure" you are going to have one that would bear the light of day? And that you would go home and tell the "folks" about? One that you would store up in your mental treasure box for future generations? If not, why have it? There are so many real adventures in life. Why not have only them?

Listen! To the words of those older and wiser. They will be glad to tell you their honest opinions with no reservations. With added years

come added foresight and knowledge. Why not heed their advice? It is valueless.

If, at the end of the journey, the slate is white and clean, there will be no regrets. There will be no desire to buy back the past, so that it might be lived again—differently.—Helen Gregg Green.

The man whose wife knows how to work over into appetizing dishes the smallest scraps of food left from meals has just cause to be thankful in these days of high-priced food-stuffs.

PENNSYLVANIA FARMER PATTERNS

Give figures and letters of each pattern exactly as printed at beginning of each description or we will not be responsible for correct fitting of orders. Give bust measure when ordering waist patterns, waist measure for skirt, and age for children's patterns. Address Pennsylvania Farmer, 261 S. Third Street, Philadelphia, Pa.

3352.—Pretty One-piece Dress for Girl.—The pattern is cut in 3 sizes: 12, 14 and 16 years. A 14-year size will require 3 yards of 38-inch material. Made of wool fabric, the ornamentation could be done with braid or beads. Pattern, 10 cents.



3405.—A Stylish Gown.—The pattern is cut in 7 sizes: 34, 36, 38, 40, 42, 44 and 46 inch bust measure. A 38-inch size will require 5 1/2 yards of 36-inch material. The width of the skirt at lower edge with plaits extended is about 2 yards. This is an excellent model for crepe de meteor, crepe de chine, velveteen, satin, taffeta, serge, tricotine, divoyn and gabardine. Braid, fur, pipings, lace or embroidery may serve for decoration. Pattern, 10 cents.

3420.—Accessories for Suit or Gown.—The pattern includes all these attractive styles. It is cut in 3 sizes: small, medium and large. No. 3 will require 7/8 yard. No. 5 will require 1 1/2 yard. No. 1 will require 1 yard for collar, and 3/4 yard for the cuffs. Pattern, 10 cents.



3428.—Quaint Little Dress for Little Girl.—The pattern is cut in 4 sizes: 2, 4, 6 and 8 years. A 4-year size will require 2 1/2 yards of 27-inch material. Challie, all-over embroidery, voile or batiste, taffeta or china silk, serge, albatross and gabardine, also linen, and gingham may be used for this style. Pattern, 10 cents.

How About It?

Are you going to install a modern water supply system this year, or will you be obliged to pump and lug water by hand for another year?

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Wells & Richardson Co., Burlington, Vermont.

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This extra fine quality heavy weight women's sweater is now offered at less than pre-war prices. **SEND NO MONEY**

Send your name and address, giving size and color wanted, and we will send you a sweater by mail postpaid. On delivery, pay mailman our low bargain price of \$2.69. Your money back if not pleased.

Sweater is made of high grade yarn, large shawl collar, two knitted-in pockets, and broad, loose detachable belt. Colors, gray or blue. Sizes 32 to 46. Why pay more for a sweater when you can get this guaranteed bargain for only \$2.69? Men's sweaters come without belt. Order one or more of these bargain sweaters now.

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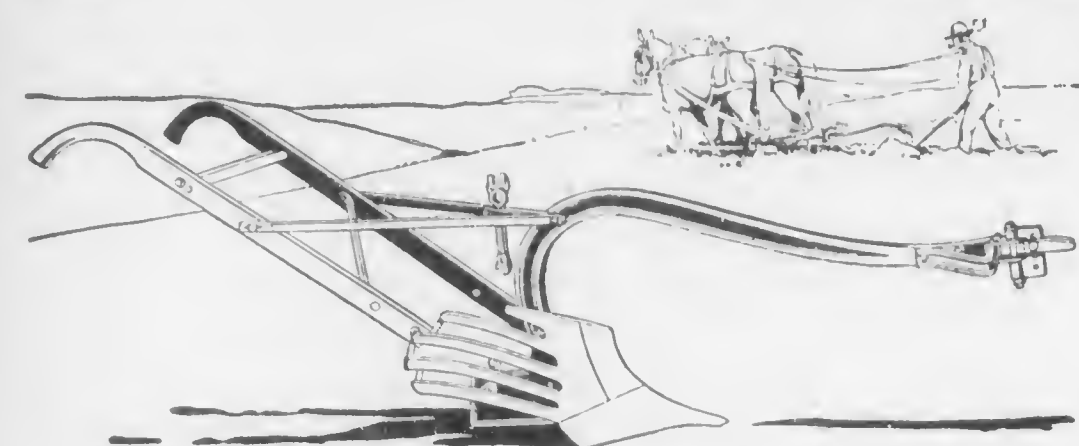
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Beechwood



A Syracuse Plow for Your Soil

NO matter what the conditions are on your farm, whether your land is wet or dry, level or hilly, or whether the soil is sand, gravel, clay or loose loam, there is a Syracuse plow to meet your every problem and do your work perfectly.

JOHN DEERE SYRACUSE WALKING PLOWS

Fifty years of successful plow-manufacture stand behind Syracuse Plows. The results of careful investigations of your plowing problems built into Syracuse Plows by men old in plow-building experience, have given the Syracuse line well-earned leadership. The man who owns a Syracuse Plow knows what real plow value is.

Syracuse Plows do good work after long usage as well as when new. Wearing surfaces are chilled deep and uniformly by the special Syracuse process. Shares are chilled on under side of cutting edge as well as upper side.

Beams are guaranteed not to bend or break. All parts, whether originals or extras, fit perfectly, and are made absolutely true to pattern design.

See the Syracuse line of plows at your John Deere dealers. Write today for folders and the 114-page book, *Better Farm Implements*, which describes the full line of John Deere tools, and tells of their care and operation. Address John Deere, Moline, Illinois, and ask for Package SW736.

JOHN DEERE

THE TRADE MARK OF QUALITY MADE FAMOUS BY GOOD IMPLEMENTS

CANVAS COVERS

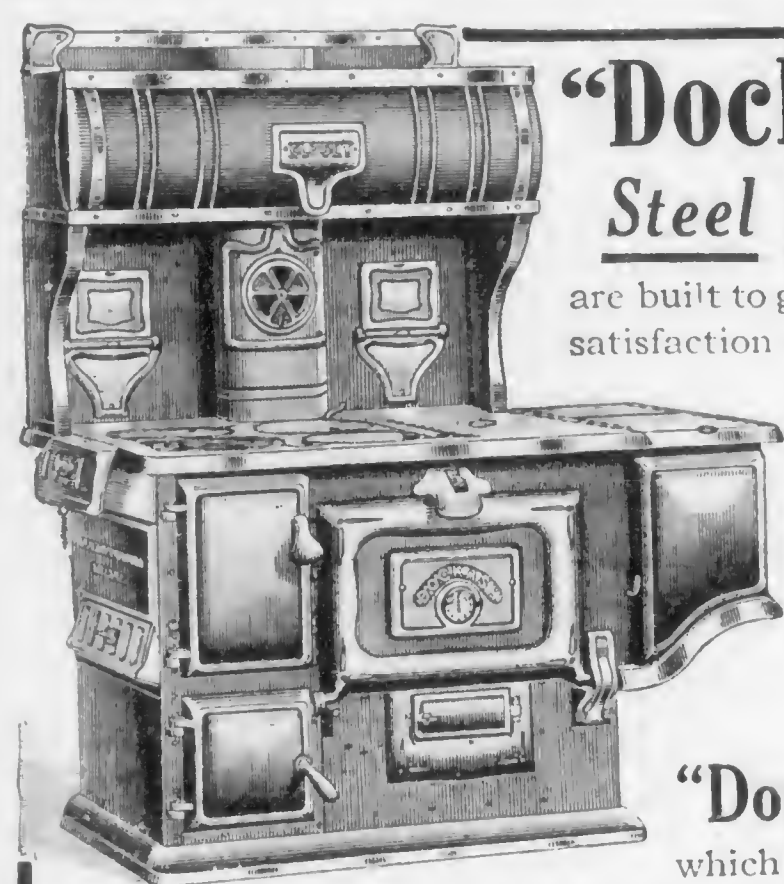
Wagon & Hay Covers with canvas, aluminum and heavy weights. Plans and Water proofed, made of a superior grade of Canvas. Best workmanship. Prompt deliveries to all parts of U. S. Money refunded if not satisfied. Send postal for prices and samples.

American Sailmaking Corporation
Dept. F, 49 & 51 FULTON STREET, BROOKLYN, N. Y.

Bargain in Tin Plate for Farm Use

Tin plate direct to you at carload prices. Used for covering feed boxes, back of stoves, etc. Many uses on farms. 50 sheets new tin, freight paid, only \$4. Sample up mail.

O. H. Sales Co., 72 Francis Ave., Hartford, Conn.



"Dockash" Steel Ranges

are built to give service and satisfaction in any kitchen.

They are made of steel (not cast iron) and have proven themselves for over 50 years. You cannot go wrong on a

"Dockash" Steel Range

which should be your next buy, for its cooking, baking and roasting qualities are unsurpassed. Made in both right and left hand styles with and without reservoir.

Write for full description and name of a dealer near you.

SCRANTON STOVE WORKS, Scranton, Pa.

THE OUTLOOK

If any business is to attract the young manhood and womanhood of the country it must present a bright outlook to them. A young man goes to college for the purpose of preparing himself for some position that looks attractive to him. And the colleges save no space in their catalogues showing to the prospective student the high salaried positions that are open to him when he has completed the course in their college. The student who takes an engineering course hopes some day to be able to build a big bridge, a tunnel, an irrigation dam, or perhaps a Panama Canal. He looks forward to the opportunity for achievement. The student who pursues a classical course looks forward and sees himself as a minister preaching the gospel to a dying world, or perhaps, as a man of letters. And so on no matter which way we look, we see the young manhood and womanhood of the country directing their energies towards the accomplishment of some great task.

But what of the position of a farmer? What of the life lived out in the country where freedom has not been adulterated by the artificial tenets of society. Is there no outlook for achievement here, no financial reward, or opportunity for one of ability to become a man among men? Is there nothing for a woman but a life of hard work and drudgery? Has the farm no outlook for her? Must the farm always be a place for the growth and development of character and not for the exemplification of that character?

It is true that for those who are short on capital the farm offers a long hard struggle of self-denial before the point is reached where one may move with more freedom; but, though the task is hard, carefulness, industry, good judgment and self-denial will have its reward. However, I well know that too often this reward comes too late in life to be of much benefit, but it is thus with many of those in other walks of life. On the other hand, for those who come thru early enough in life to have many of their best years yet ahead of them there is now as there never was before opportunities for achievement and service to their fellow men which should not be overlooked or despised.

The pursuit of this opportunity for service and achievement lies in the great movement now getting under way for the complete organization of the farmer. The season of talking is about over and something definite and tangible must come into being. Old prejudices must be given up and farmers must come together in community organization with a national scope, first, then commodity organization both locally and nationally. Happily, we need not wait for the first kind or community organization. The Grange, which for more than fifty years has stood the test of time and fought and won more battles for the farmers than any other organization that has yet come into existence, is already here with full equipment of machinery to do the farmers' will. If only more farmers would lay aside their prejudices and join with their neighbors in strengthening and financing this self-help organization to the point where its voice could not be denied. The day is coming in Pennsylvania and in the nation when the farmers must step out and show by their support just what kind of an organization they wish to represent them. And may I suggest that in my judgment the only

one that will benefit the great body of farmers is the one fully financed and officered and supported by the real dirt farmers of the nation.—V. Ross Nicodemus, Bedford Co., Pa.

ELECTRICAL PLANT A SUCCESS

Since I had an electric water system installed I have always found that a supply of running water anywhere I want it is one of the most valuable things on my farm.

The system is operated by my electric power and light outfit and automatically starts when the pressure in the tank lowers to a certain point and stops when it raises to another. That saves me the trouble of operation, as well as lot of time I would otherwise have had to take to pump the water by hand and it saves me countless steps carrying pailful after pailful of water required for household uses, and for my horses and livestock.

Besides this daily saving, running water at the barn saved me considerable expense when I filled my silo in October.

My corn was very dry, making it necessary to add water in order to keep it in good condition. Here is where my electric water system stood me in good stead; the little pump drew water from the bottom of a forty foot well and distributed it at my barn 300 feet distant. Then it forced the water up about 25 feet into the silo. Some pump, I'll say.

It saved me the services of a man and team. Without my water system I would have had to use a team to haul the water and a man to pump it at the well and empty it in the silo.—W. E. S.

IF YOU CAN'T TRUST HER, DON'T MARRY HER

I was greatly interested in the article "The Business Farmer's Wife" and I wish all farmers and their wives could and would read it.

If a man thinks his wife is so stupid she couldn't possibly comprehend his business and there is no use telling her about it, why on earth did he marry her? He may die before she does and what will become of their business then? A widow with no knowledge of the firm's business is certainly in a bad fix. Is it any wonder that many lose their minds?

How few men, comparatively, ever consider their wives as partners in all? Often she is housekeeper, cook, and a sort of "handy man" about the place but when it comes to money matters she is counted out entirely. This, I believe, is less frequently the case in these days than formerly, but it is still by far too common. Some men honestly think their wives are busy enough without bothering with business, but these men are not the ones who scrimp the spending money. Far more men keep their business strictly to themselves because they have no intention of sharing their money with the other member of the firm—her share consists exclusively of work. I know a sweet little woman with no end of work to do whose husband refused to buy her any shoes because the price didn't suit him. If such instances were not common why would the question of "pin money" for farm women exist at all? It never did at our house; as long as my husband lived he always gave me far more money than I spent or had any need of spending. I had free access to his purse and his bank book and was told to help myself. If a man can't trust his wife he should have bid her "adieu" before she became his bride.—Mrs. A.



"The use of a truck on Goodyear Cord Tires has enabled me to release three teams and three drivers from threshing work and is shortening the length of my harvesting season three to four weeks, thus helping the thresher to finish the job while good weather lasts. The pneumatics roll easily over plowed fields, through stubble, barnyard mud, snow and so on. At 12,000 miles, they look good for 12,000 more."—Carl J. Gustafson, Owner of Willow Grove Farm, near Aberdeen, South Dakota

MORE and more farmers constantly are reporting, as above, marked benefits obtained from motorization and particularly from motor trucks on Goodyear Cord Tires.

They have found that quick field hauling assists power-machines by prompt supply and removal of loads, and that the pneumatics make such hauling possible.

A sturdy truck on Goodyear Cord Tires, therefore, is of vital aid to year 'round motor-farming; to motorized pumping, spraying, threshing, silo-filling, feed-grinding and other work.

Pneumatic traction overcomes soggy, slippery going; pneumatic cushioning prevents severe shaking and loss of load; pneumatic activity saves much time.

By the development of the rugged Goodyear Cord construction, all these advantages of the big pneumatics have been made most intensely practical for farm service.

Farmers' accounts of how motorization and pneumatics have saved labor, crops, time and money, can be obtained from The Goodyear Tire & Rubber Company, Akron, Ohio, or Los Angeles, California.

GOODYEAR CORD TIRES



"U. S." Boots—Reinforced where the wear is hardest. Made in all sizes and styles—Hip, Half-hip, and Knee. In red, black and white



Backed by 74 years of experience

Built of rubber from our own plantations—the "U.S." Boot

SEVENTY-FOUR years of expert manufacture—years of careful research and constant improvements—are behind this U. S. Boot.

Wear — comfort — appearance — it has them all!

Built of the finest quality rubber from our own plantations—modelled on scientifically designed lasts—shaped by expert workmen who take real pride in the finished product—these are the reasons why farmers everywhere should get U. S. Boots whenever they buy.

Reinforced where the wear is hardest

1. The Sole—Five soles in one, all of the finest rubber.

2. Back of the Heel—Every step you take puts a strain on the seam in back. At this point every U. S. Boot is reinforced with *ten thicknesses*.
3. The Toe—Has three heavy layers, a special toe-cap, and an extra sheet of highest quality rubber on the outside.
4. The "bend" in front—A boot has no lacing in front to "give" as you walk. Every step you take, the rubber bends and buckles. Six heavy thicknesses give long wear to U. S. boots at this point.

The U. S. Boot is built layer by layer carefully and skilfully, then welded into *one solid piece*.

The U. S. Boot is just one type in a complete line of rubber footwear to meet every need on the farm.

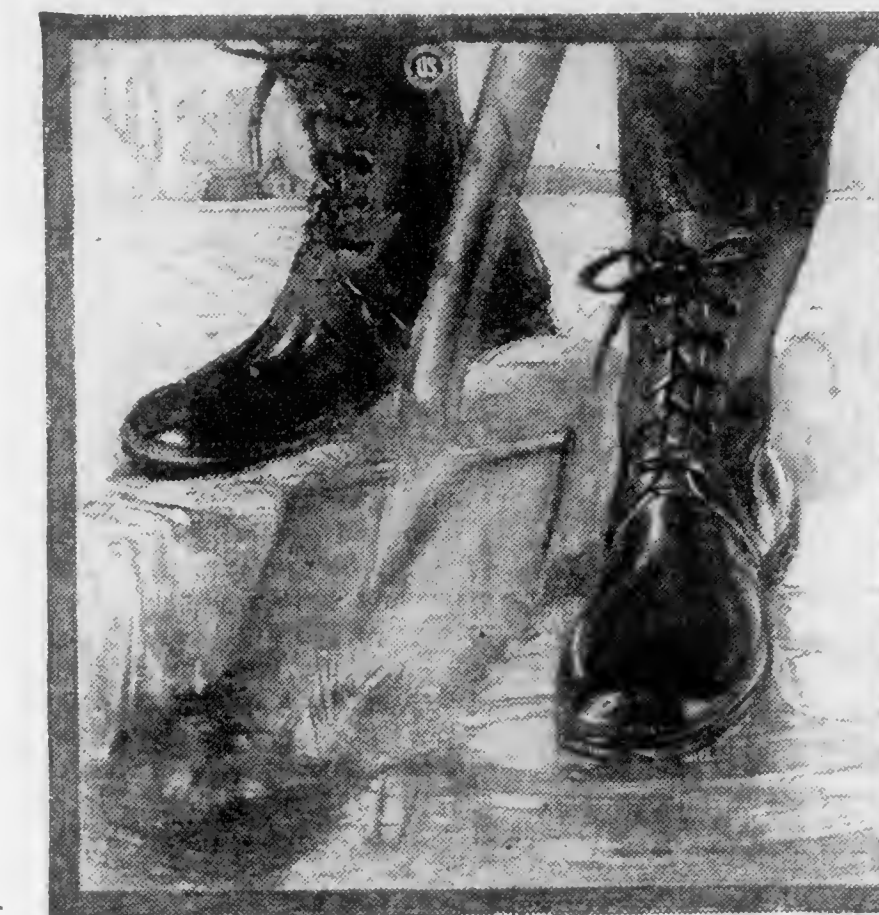
A new kind of overshoe for farmers

All the warmth and convenience of a cloth-top arctic, as watertight and easily cleaned as a rubber boot—that's the new U. S. Walrus.

It's an all-rubber, buckled overshoe that you can slip on and push off in a moment. It has a warm, fleecy lining—and its smooth rubber surface is absolutely watertight. Best of all, you can clean it instantly under a faucet or at the pump while it's still on your feet. It will keep your shoes clean and the house clean, too.

A watertight shoe for all-round wear

The U. S. Bootees give you the protection of a boot with the comfort of a shoe. They slip on over your socks like a leather shoe. You can wear them all day long in mud and water—your feet will stay dry and comfortable.



"U. S." Bootees—Worn over the sock like a leather shoe. An all-rubber surface—easily washed off. Hy-Bootee, six eyelets; Lo-Bootee, four eyelets. In red, black and white



"U. S." Rubbers—A wide range of models, in light and heavy styles to meet every need. Made in all sizes, for men, women, and children

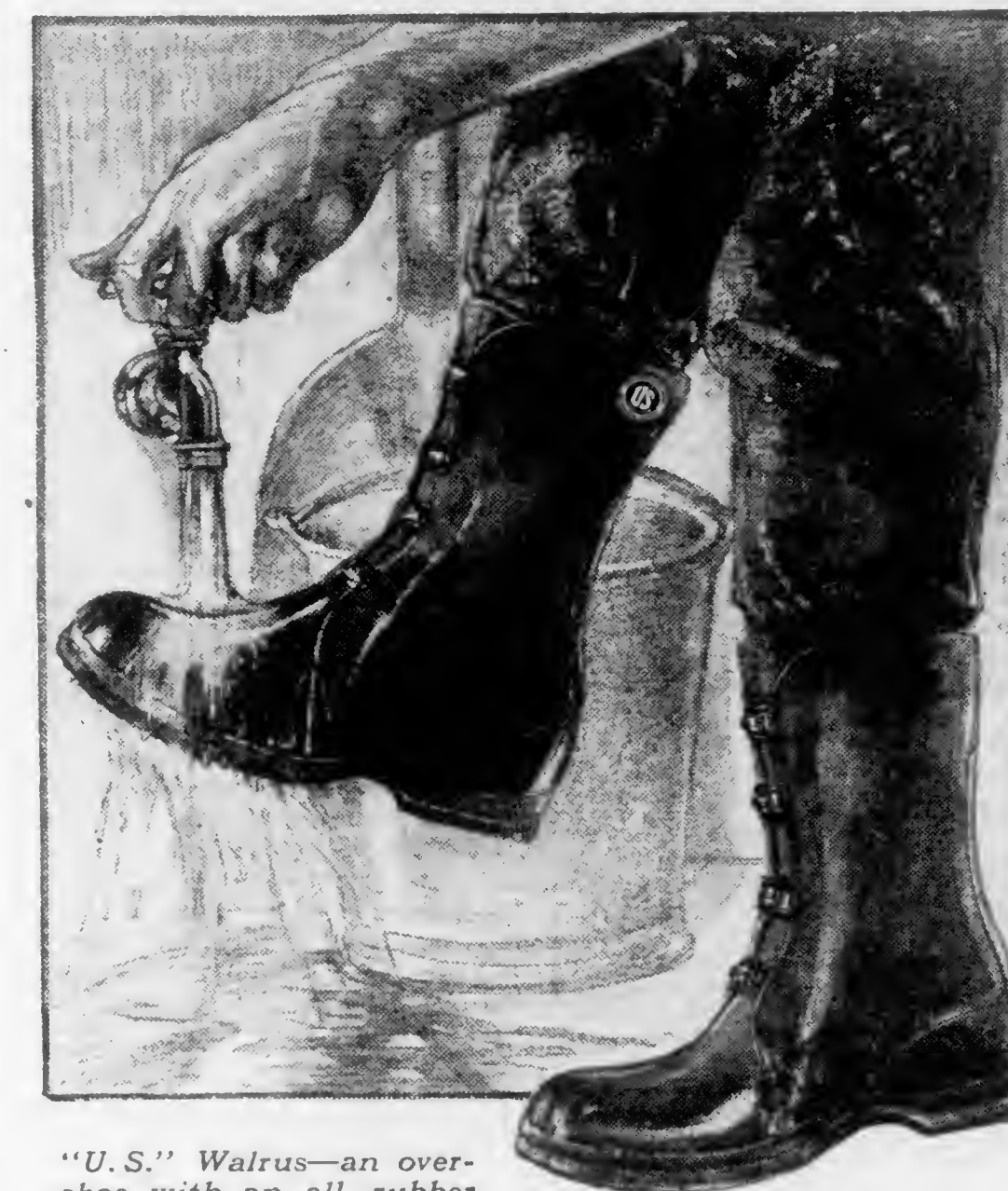
Other types of "U. S." Footwear—built for rough service

The U. S. line of footwear has a type for every need—arctics, rubbers, "overs"—all built in the same rugged, reliable way.

They all have tough, heavy soles—special reinforcements at every point where the wear is hardest—and the highest quality rubber.

Ask your dealer to show you his U. S. line. Pick out the type best suited to the work you do. Every one has been designed by experts—every one is backed by over half a century of experience.

Always look for the U. S. Seal—it means solid wear and long service for your money.



"U. S." Walrus—an overshoe with an all-rubber surface that can be cleaned instantly. Warm as an arctic. Absolutely watertight. All weights and sizes. In red, black and white

United States Rubber Company

Look for this seal



on all "U.S." Footwear

Mechling's SCALE OIL

The spray that
will positively

Kill Scale Kill Aphis Eggs Kill Pear Psylla

If you have a bad case of Scale of any kind use the spray that is guaranteed to give better results than Lime Sulphur. The best winter and dormant spray.

Manufactured by
Mechling Bros. Mfg. Co.
Phila., Pa. Boston, Mass.
Camden, N. J.

We make a full line of Spraying chemicals—Lime Sulphur, Hydroxide, Lead Arsenate, Calcium Arsenate, Dusting Mixtures, Sulphur (all kinds.)

If your dealer does not carry our line write us direct.

Insecticide Dept., Camden, N. J.

R. K. TIRES Never Disappoint

A tire is an investment that should pay for itself. It should give you the most service for the least money. It should be safe, reliable, and give you the most pleasure.

The following are the prices at our guaranteed price:

Tire Size	Price
30x3 1/2	\$2.50
32x3 1/2	\$3.00
34x3 1/2	\$3.50
36x3 1/2	\$4.00
38x3 1/2	\$4.50
40x3 1/2	\$5.00

Send for descriptive booklet and price list. Good Territory Open for Live Agents.

R. K. Tire Company
837 No. Broad St., Dept. A, Phila., Pa.

World's Best Roofing

"Red" Cluster Metal Shingles, V-Crimp, Corrugated, Standing Seam, Painted or Galvanized Roofing, Siding, Wallboard, Etc., direct to you at lowest factory prices. Possibility greatest offer ever made. At Factory Prices.

Edwards "Red" Metal Shingles
Get our wonderful 12-page booklet and price list. We will send you a free sample of our shingles. Ask for booklet. 1921.

LOW PRICED GARAGES
Lowest prices on Ready-Made Fire-Proof Steel Garages. Set up anywhere. Send postal for catalogue showing photos of these beautiful buildings.
THE EDWARDS MFG. CO.
1341-1351 Pine St., Cincinnati, O.

FREE Samples & Roofing Book
FIRE PROOFED Bldgs. Necessary in the South. With 100,000 sq. ft. of steel and 100,000 sq. ft. of concrete. These are the best fireproof bldgs. in America. And you can have them for as little as \$100.00. Ask for catalogue. F. A. CLARK, Xenia, Ohio, R.C.



POULTRY

WHY PULLETS DO NOT LAY

If you were constantly knocking around among farmers where poultry is a considerable source of revenue as I am perhaps you would realize as I have realized the necessity of getting the chicks out early. In doing culling work thru the combelt I seldom find a farm flock which can be said to be profitable where the chicks are not gotten out in March or at least by the first week in April. This is especially true of the larger breeds such as Reds, Rocks, Wyandottes and Orpingtons of which most farm flocks at the central west are composed. And I find the most profitable of all of these are found where the chicks have been gotten out at one or at most two hatches.

Although the April hatched Leg Horn will mature in time to start laying before cold weather sets in the larger breeds hatched in this month, particularly after the middle of the month, will seldom begin to lay much before January under the methods of handling practiced on the average farm. It is a regular thing to find weak pullets in the fall when three or four hatchings have been made in the spring. The latter hatches are almost invariably left to run with the early chicks and altho two hatches made three weeks apart get along fairly well when they are large enough to leave the brooder, there is a vast difference between chicks six weeks or more old. The earlier ones naturally grow faster, beg the feed and continually worry the younger chicks and their growth is consequently set back. The older chicks usually have the advantage of fresh ground, get a larger proportion of the natural supply of animal food in the shape of worms and bugs and have more succulent green food on the range.

From November until late December I am constantly being asked to call and cull flocks because they are laying no eggs and their owners are under the impression that they have a lot of slackers on their hands. Except where such culling is done from the standpoint of selecting breeding birds I discourage culling at this time to any considerable degree. Culling should be done between August first and December first to be of most worth in eliminating the slacker hen and the later cullings primarily to make a better selection of birds from which eggs are to be hatched.

The reason no eggs are had at this time of year is simply that the old hens are taking a seasonal, and perfectly normal rest. November and December are not normal producing months for hens. Pullets must be depended upon at this time to fill the egg basket and to keep it filled during the winter for the old hens will not normally start production much before the first of middle of January. But pullets often do not perform and the man doing private culling or the extension worker from the experiment station is asked to tell why.

Now in my own experience I have found that at least seven times out of ten it was simply a matter of immaturity among pullets. It is true that housing conditions and feeding methods and ration sometimes have something to do with the matter and

occasionally an especially poor laying strain of pullets is found. But all in all the late hatches can be blamed for most of the trouble. So if you expect November and December—in short any number at all of winter eggs—impress upon yourself that now is the time to prepare for them. No amount of culling, feeding or forcing will make up for mistakes made in failing to get the chicks out. Cull the old hens rather than the pullets and expect the latter to be the winter profit payers.

Most of us have been admonished to get our chicks out early until the saying seems trite but I assure you that nothing is more vital to putting the balance on the right side of the ledger than that very thing. So not only make a contract with yourself to do this thing this spring but provide the necessary hatching capacity and brooder room to get out all the chicks you are going to need in two hatches if you can or at most three. And if you do run three start the first one early enough so the last one will come off not later than the first week in April for the general purpose varieties and be sure to provide separate ranges for at least the last batch of chicks.

All of your Leghorns or other light breeds may be hatched in April with a very fair promise of success and it is a big help both in caring for the chicks until they go into the laying house in the fall and in feeding them afterward to have the pullets as near the same size as possible. The fact that you have done very well with late hatched chicks should not mislead you for nine times out of ten such cases are the exception and prove merely that a lot of work was put in in caring for the chicks or that the owner was exceptionally lucky or both so if you want full egg baskets at the time the old hens are taking their yearly rest provide for it by getting out a sufficient number of pullets that will mature before cold weather starts.—W. C. Smith.

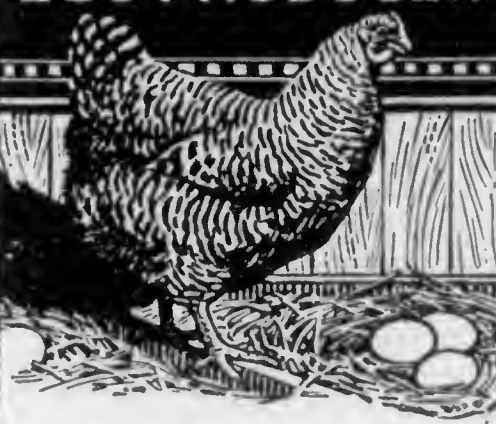
SELECTING VIGOROUS CHICKS

The chick with the big bright eye and the short stout beak is apt to be more vigorous than the dull-eyed chick with the beak that appears longer. In some cases the beak of the weak chick will seem long because the head is undersize and droopy. Note a flock of skillfully managed brooder chicks that are growing rapidly. Their beady eyes fairly sparkle with life.

The best day old chicks will have a medium long and broad back without suggestion of the undersized runt. The fluff will be rounded out and glossy. The shanks and toes will appear sturdy and stocky suggesting vigor and ability to scratch for a living. The wings should be well folded. This seems to be a mark of vigor at all ages. When the wings of the growing chicks are strong and tightly folded to the body those chicks seem to be making an even thrifty growth. We do not like to see the wings of chicks get too far ahead of the bodies and tire out the chicks from carrying them around.

Incubators now do their work so well that the breeding stock or the poultryman are to blame if chicks are puny and dull.—R. C. Kirby.

RUST'S EGG PRODUCER



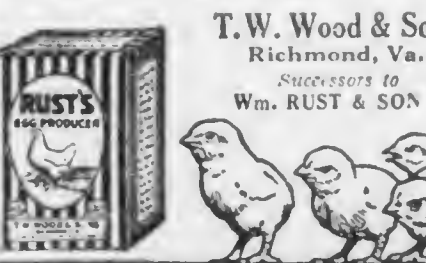
Makes Hens Lay Winter Eggs

Mix RUST'S EGG PRODUCER with their daily ration. Soon you have crackling red round chickens laying more and more eggs each week.

RUST'S EGG PRODUCER tones up the egg producing organs. Used by professional poultrymen for thirty years. If your dealer can't supply you, send us his name and \$35 and we will send you postpaid 1-lb. trial package.

Beware of Roup

One ounce of prevention is equal to a pound of cure. RUST'S ROUP POWDER keeps healthy in the drinking water of the flocks during the Fall and Winter months will keep your flocks free from this dreaded disease.

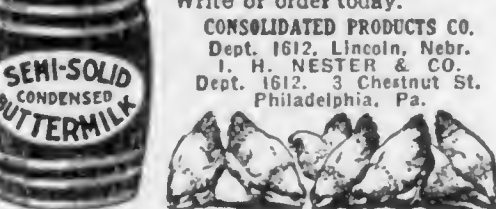


Make 'Em Lay

Get thirty to forty percent more eggs from the same flock by feeding SEMI-SOLID BUTTERMILK. Numerous experiments absolutely prove that your egg yield may be increased by feeding this wonderful food and tonic for poultry.

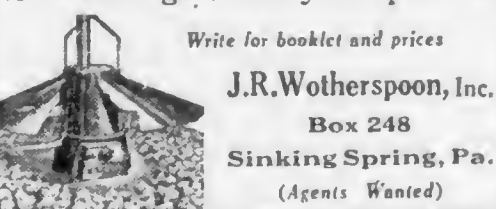
Semi-Solid Buttermilk

(A Tonic as well as a Feed)
Semi-Solid Buttermilk is a highly nutritive poultry feed and the best tonic and conditioner. Contains no injurious preservatives. Stays fresh indefinitely. It will keep your hens laying all winter. Be sure to get the genuine Semi-Solid Buttermilk. Write or order today.



EUREKA Colony Brooder

Use it 30 days at our expense. You take no risk. Burns coal or natural gas. Easy to operate.



Quality Poultry Meat

POSITIVELY MAKES HENS LAY & PAY. A good order will ensure you. Write us for prices and literature. READING CHEMICAL CO., Reading, Pennsylvania.

Largest Auto Wreckers in Pennsylvania NEW AND USED PARTS FOR ALL CARS

At a discount of 30 to 75% Mail orders promptly attended to. Overland and Spauldinger parts a specialty. GREENE AUTO & PARTS CO., 261 N. River Street, Wilkes-Barre, Pa.

150 SINGLE CORN WHITE LEONHORN Pullets, Hatched March 22, 1921. Also 60 and 100 birds. GEO. WALTER, Seven Valleys, Pa.

BLUE RIBBON WINNERS

(Continued from Page 3).

good protein content. The rows were very straight running from butt to tip.

Market Condition

This factor, strange as it may read to the eastern farmers is why more of our corn failed to place than for any other reason. This I particularly noted was the case with the samples exhibited from Pennsylvania, Delaware, Maryland and Virginia. The western states having realized the necessity of market condition in judging show corn several years ago.

If the grain is loose on the cob, do not put the ear in your sample as one loose ear will 'kill' the sample. The grain on each ear must be solid and the germ bright when cut open. There was not more than four samples from the East that showed good market condition as every other sample had one or more loose-grain ears. I appreciate the fact that the grain always dries faster than the cob and this causes the grain to temporarily loose until the cob dries. But after this happens the ear will be from one-quarter to one-half inch shorter and under all probability will not fit in your sample so as to retain uniformity of length. Therefore, the judges realizing this, discard your sample. Again these loose grain ears are an evidence that you grow a variety too late in maturing for your locality, and in a short season it would fail to mature. Therefore, show ears solid and in good market condition.

Points of Perfection

What constitutes a perfect ear? In order to pick a good sample of corn for exhibition we must always bear in mind what constitutes a perfect ear. According to the present score card a perfect ear is one containing twenty rows of grain and each row running straight from butt to tip; length of ear, ten to ten one-half inches; circumference, seven one-half to seven three-quarter inches, one third distance from butt of ear, and the ear must be cylindrical, or only slightly tapering from butt to tip.

Adaptability of Exhibit to Region Where Grown

This factor perhaps does not count so much in the show game as the other points mentioned. However, it does count often in placing an exhibit of small corn over an exhibit of larger corn where they are grown in two distinct regions, the number of days in the growing season being different but are competing in the same class. The judges realize that a sample of corn grown in a region having 120 days for growing should not be as large as a sample grown in a section having a 140-day growing period. Therefore, pick an average-size sample for your section, one not too large or too small, in an effort to bring out some other points of perfection. The smoother and tougher types of corn count considerably here as the shorter the growing season the smoother should be the corn.

In conclusion I wish to say this is of great importance to our eastern farmers and if we will only spend more time in selecting our show corn for exhibition I feel confident we can equal the exhibits of the corn belt. We have equally as many and as good show ears but we have failed to give the required time in selecting them.



The Healthy Cow, the Hungry Cow is the Business Cow

She's the cow that will convert her feed of grain and fodder into pails of milk. Remember, the better the appetite, the greater the food consumption, the greater the milk production. Hence, good health, a strong appetite and good digestion are the absolute essentials of a big milker.

Dr. Hess Stock Tonic

Keeps cows healthy. It makes cows hungry.

It contains Nux Vomica, that greatest of all nerve tonics. It whets the appetite, brightens the eye, invigorates the system. It contains Quassia, that bitter Stomachic tonic that produces appetite. It contains Iron that helps to replenish rich red blood, so essential to a cow in milk.

Lastly, but just as important is it—it contains Laxatives and Diuretics that cause the kidneys to filtrate and the bowels to operate regularly, so as to throw off and carry off the waste material. There is no clogging of the system where Dr. Hess Stock Tonic is fed.

Good alike for cattle, horses, hogs and sheep. It keeps animals healthy, the whole herd thrifty. It expels worms. Always condition your cows for calving with a course of Dr. Hess Stock Tonic before freshening.

Dr. Hess Stock Tonic is compounded strictly on scientific lines. You buy it according to the size of your herd. Tell your dealer how many cows you have. He has a package to suit. We guarantee good results in the milk pail.

25 lb. Pail, \$2.50

100 lb. Drum, \$8.50

Except in the far West, South and Canada. Smaller packages in proportion.

DR. HESS & CLARK

Ashland, Ohio

Dr. Hess Dip and Disinfectant Keeps the Dairy and Stables Healthful and Clean Smelling

AMERICA'S
LEADING FUR HOUSE

TRAUGOTT
SCHMIDT
AND SONS

GET
MORE MONEY
FOR YOUR FURS

Ship to us and make sure of getting "The market's highest price." WE'LL SHIP YOUR FURS "SLIDING SCALE" OF PRICES. Instead we quote one dependable price as you POSITIVELY KNOW what your education will bring. We charge no commission—pay all transportation charges and send money same day furs arrive.

FREE!
Write for valuable booklet, "Successful Trapping", price list, market report, shipping tags, etc.

TRAUGOTT SCHMIDT & SONS,
124 Monroe Ave., Detroit, Mich.

One Man Saws 40 Cords a Day

Easily—At a Cost of 1 1/2 Cents a Cord!

Write today for Big Special Offer and Low Direct Factory Price on Ottawa Log Saw. Strictly a one-man outfit that will beat the Coal Shortage and make big money.

OTTAWA LOG SAW Cuts Down Trees—Saws Logs By Power

Does Work of 10 to 15 Men at less than one-tenth cost. Saw makes 300 strokes a minute. Mounted on wheels. Easily moved from log to log and from cut to cut along the log by one man. No more back-breaking cross-cut sawing. The Ottawa falls from any size. As one-third of the tree is in the branches, a specially designed fast cutting engine. Simply built, nothing to get out of it. Use little fuel. Works well in any kind of weather and on any kind of ground.

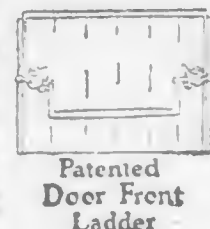
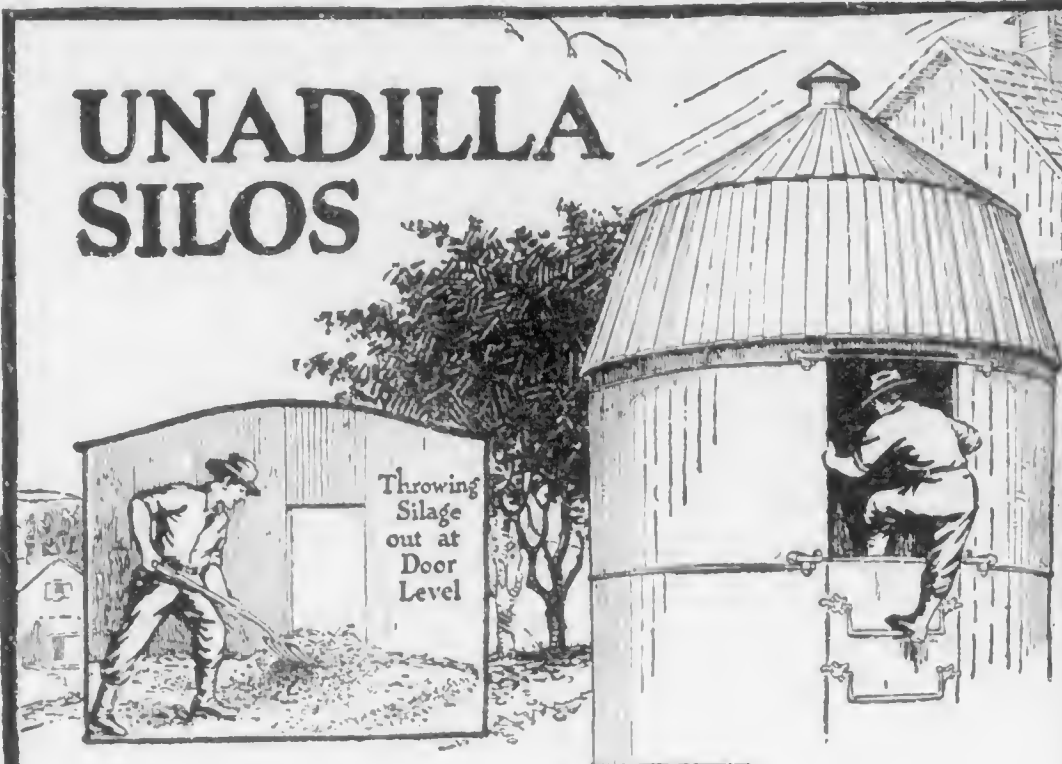
Direct Gear Drives Saw—no chains to tighten; no keys; no set screws—4-cycle Frost Proof Engine with counter-balanced crank shaft. Pulls over 4 1/2". Oscillating Magneto Ignition, and Automatic Governor with Speed Regulator. Special clutch, lever controlled, enables you to stop saw without stopping engine. Simply built, nothing to get out of it. Use little fuel. Works well in any kind of weather and on any kind of ground.

30 Days Trial Cash or Easy Payments and find out how easy it is to own an OTTAWA and let it pay for itself as you use it. You are fully protected by 30 day trial. The OTTAWA must back our 10-year guarantee. Over 10,000 satisfied users all over the world.

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TALKS WITH THE BOYS

THE EDITOR'S LETTER

To the Boys:

Well boys, what is your opinion by this time about our department? Is it worth while? Of course, I have not had time yet to hear from you and so, for this week again, I will have to do most of it myself. After this week I am sure I will have received letters from some of you. No doubt some of them will be good to print while others will give me suggestions on what to talk about. Some day we will have a talk on how to write a good letter. One of the first rules about writing for publication is to write on one side of the paper only; another is, leave a margin down the left hand side of the sheet.

I received a letter the other day from a grown-up, urging me to start a campaign for the preservation of birds. He said that people should study birds more and be willing to give some attention to feeding them during the winter and to furnishing them with nesting places in the spring. That is a good thought. Boys, do you realize how much depends upon the work of birds? It has been said that if all birds should die this country would become a desert in three to five years. Insects would kill all kinds of vegetation. Did you ever try to see how many different birds you could identify by sight or song? I find that most of us grown-ups don't know much about birds, and I doubt if grown people will take up the question seriously. It will depend upon the young people, since their eyes are keener and their memory of sound better. I am sure we will have something from time to time that will be interesting and also teach us how we may help in preserving the bird life about our homes.

I hope you are all taking a real interest in your school work and that no boy under sixteen years of age is staying out of school. If any of you are doing so, will you not tell me why? The more of life I see the more I am convinced that no boy can afford to miss any opportunity to get a good education. I know that some boys think it is more manly to stay out of school and work, or maybe just loaf around. Boys, it's a mistake. You can't afford it. The day will come when every day missed will show up in your income. Don't be fooled by somebody's saying, "There's old Mr. So-and-so who never went to school and he got rich." That was possible to a few in the past, but it is not possible now.

But making money is the least of the advantages of an education. The intelligent man has more enjoyment in life. He is more useful in his community, and can render better service to his country. Now, I hope you will not think I am going to use this column for lecturing you, but there are some things we want to get straight at the beginning, and one of those things is that a good, keen, trained mind is a necessary foundation if you are going to build a life that is worth while. By a trained mind I mean a mind that is able to read understandingly, think clearly and see intelligently. That's what an education is—the ability to do these three things.

EULOGY ON THE DOG

The following is a plea which Senator Vest once made before a jury when a case involving a dog was being tried. It is said that spectators and jurymen broke down and wept. It is needless to say he won the case. Gentlemen of the Jury—The best friend a man has in this world may turn against him and become his enemy. His son and daughter that he has reared with loving care may become ungrateful. Those who are nearest and dearest to us, those whom we trust with our happiness and our good name, may become traitors to their faith. The money that a man has he may lose. It flies away from him when he may need it most. Man's reputation may be sacrificed in a moment of ill-considered action. The people who are prone to fall on their knees and do us honor when success is with us may be the first to throw the stone of malice when failure settles its cloud upon our heads. The one absolutely unselfish friend a man may have in this selfish world, the one that never deserts him, the one that never proves ungrateful or treacherous, is the dog.

A man's dog stands by him in prosperity and poverty, in health and in sickness. He will sleep on the cold ground, when the wintry winds blow and the snow drives fiercely, if only he may be near his master's side. He will kiss the hand that has no food to offer, he will lick the wounds and sores that come in encounter with the roughness of the world. He guards the sleep of his pauper master as if he were a prince.

When all other friends desert, he remains. When riches take wings, and reputation falls to pieces, he is as constant in his love as the sun in its journey thru the heavens. If fortune drives the master forth an outcast into the world, friendless and homeless, the faithful dog asks no higher privilege than that of accompanying him, to guard him against danger, to fight against his enemies; and when the last scene of all comes and death takes his master in its embrace and his body is laid away in the cold ground, no matter if all other friends pursue their way, there by his graveside will the noble dog be found, his head between his paws and his eyes sad, but open in alert watchfulness, faithful and true even to death.

GOOD HEALTH HABITS

Start the New Year with the resolution that you are going to do daily many little things that will add to your mental and physical welfare.

Let the other fellow do the worrying.

Hit the hay early—and regularly. Brush the teeth and rinse the mouth before retiring and again in the morning. You will appreciate the good condition of your teeth in later years.

Drink plenty of water daily—an excellent precaution against future ills.

Give more care to the choice of food.

Partake of fruit and vegetables daily.

Leave the flivver in the garage occasionally and walk.

PASSING EVENTS IN PICTURES



- 1—A Beautiful Scene of the Mountains of Switzerland. The Slopes are usually alive with Skis and Bobsleds.
- 2—Miss Lorena Trickey, weighing 90 pounds, has gained an enviable reputation as the World's Champion Horsewoman.
- 3—On the Trail of the Cougar in Kalbar Forest.

- 4—Washington's Newest and Most Beautiful Memorial.
- 5—A Young Mother of Central Himalaya, and Her Babe, in Holiday Attire.
- 6—Alexandre Millerand, new President of France.
- 7—This Young Lady finds that her little Buckboard does the Trick as well as any Rolls-Royce or Pierce-Arrow Car.

- 8—Preparing for a Flight.
- 9—Los Angeles Firemen learning Life Saving Tricks in the six-story Practice Tower, erected for that purpose.
- 10—Bapallo, a seaport where Italians and Jugo-Slavs Meet to Settle Land Claims.
- 11—Little Miss Andree who recently Sailed for Spain with Little "Gracie."

(Photo. Copyright by Underwood & Underwood)



The Voice of the Pack

by Edison Marshall

SYNOPSIS

Dan Pauling had just received from his physician the unenviable information that he had but six months to live. After desponding from a long line of hardy pioneers, his life had been spent in the city where confinement in an office had destroyed the physical foundation which his forebears had laid. He strolled out to the city park, seated himself on a bench where he made the acquaintance of a squirrel. The squirrel's antics awoke a latent love and appreciation for the things of Nature and he suddenly resolved to spend his last six months in the forests of the Northwest where his grandfather had lived. He acts at once upon this resolve and he is soon in the virgin forests of that great country. He is fortunate in becoming an inmate of a home owned by a man who knew and loved Dan's grandfather. A daughter, nicknamed Snowbird, is also a member of the family.

CHAPTER I—BOOK II The Debt

IT WAS true that in the two months Dan had spent in the mountains he had learned to be very receptive to the voices of the wilderness. Lennox had not been mistaken in thinking him a natural woodsman. He had imagination and insight and sympathy; but most of all he had a heritage of wood lore from his frontiersmen ancestors. Two months before he had been a resident of cities. Now the wilderness had claimed him, body and soul.

These had been rare days. At first he had to limit his expeditions to a few miles each day, and even then he would come in at night staggering from weakness. He climbed hills that seemed to tear his diseased lungs to shreds. Lennox wouldn't have been afraid, in a crisis, to trust his marksmanship now. He had the natural cold nerve of a marksman, and one twilight he brought the body of a lynx tumbling thru the branches of a pine at a distance of two hundred yards. A shotgun is never a mountaineer's weapon—except a sawed-off specimen for family contingencies—yet Dan acquired a certain measure of skill at small game hunting, too. He got so he could shatter a grouse out of the air in the half of a second or so in which its bronze wings glinted in the shrubbery; and when a man may do this a fair number of times out of ten, he is on the straight road toward greatness.

Then there came a day when Dan caught his first steelhead in the North Fork. There was no finer sport in the whole west than this—the play of a fly, the strike, the electric jar that carries along the line and thru the arm and into the soul from where it is never quite effaced, and finally the furious strife and exultant throb when the fish is hooked. There is no more beautiful thing in the wilderness world than a steelhead trout in action. He simply seems to dance on the surface of the water, leaping again and again, and racing at an unheard-of speed down the rapids. But now and again amateur fishermen without souls have tried to pull him in with main strength, and are still somewhat dazed by the result. It might be done with a steel cable, but an ordinary line or leader

breaks like a cobweb. When his majesty the steelhead takes the fly and decides to run, it can be learned after a time that the one thing that may be done is to let out all the line and with prayer and humbleness try to keep up with him.

Dan fished for lake trout in the lakes of the plateau; he shot waterfowl in the tule marshes; he hunted all manner of living things with his camera. But most of all he simply studied, as his frontiersmen ancestors had done before him. He found unceasing delight in the sagacity of the bear, the grace of the felines, the beauty of the deer. He knew the chipmunks and the gray squirrels and the snowshoe rabbits. And every day his muscles had hardened and his gaunt frame had filled out.

He no longer wore his glasses. Every day his eyes had strengthened. He could see more clearly now, with his unaided eyes, than he had ever seen before with the help of the lens. And the moonlight come down thru a rift in the trees and showed that his face had changed too. It was no longer so white. The eyes were more intent. The lips were straighter.

"It's been two months," Silas Lennox told him, "half the four that you gave yourself after you arrived here. And you're twice as good now as when you came."

Dan nodded. "Twice! Ten times as good! I was a wreck when I came. Today I climbed halfway up Baldy—within a half mile of Snowbird's cabin—without stopping to rest."

Lennox looked thoughtful. More than once, of late, Dan had climbed up toward Snowbird's cabin. It was true that his guest and his daughter had become the best of companions in the two months; but on second thought Lennox was not in the least afraid of complications. The love of the mountain women does not go out to physical inferiors. "Whoever gets her," he had said, "will have to tame her," and his words still held good. The mountain women rarely mistook a maternal tenderness for an appealing man for love. It wasn't that Dan was weak except from the ravages of his disease; but he was still a long way from Snowbird's ideal.

And the explanation was simply that life in the mountains gets down to a primitive basis, and its laws are the laws of the cave. Emotions are simple and direct, dangers are real, and the family relations have remained unchanged since the first days of the race. Men do not woo one another's wives in the mountains. There is no softness, no compromise; the male of the species provides, and the female keeps the hut. It is good, the mountain women know, when the snows come, to have a strong arm to lean upon. The man of strong muscles, of quick aim, of cool nerve in a crisis is the man that can be safely counted on not to leave a youthful widow to a lone battle for existence. Although Dan had courage and that same rigid self-control that was an old quality in his breed, he was still a long way from a physically strong

man. It was still an even break 'tween the vision had been whether he would ever wholly recover from his malady.

But Dan was not thinking about this now. All his perceptions had sharpened down to the finest focal point, and he was trying to catch the spirit of the endless forest that stretched in front of the house. The moon was above the pines at last, and its light was a magic. He sat breathless, his eyes intent on the silvery patches between the trees. Now and then he saw a shadow waver.

His pipe had gone out, and for a long time Lennox hadn't spoken. He seemed to be straining too, with ineffective senses, trying to recognize and name the faint sounds that came so tingling and tremulous out of the darkness. As always, they heard the stir and rustle of the gnawing people: the chipmunks in the shrubbery, the gophers who, like blind misers, had ventured forth from their dark burrows; and perhaps even the scaly glide of those most-dreaded poison people that had lairs in the rock piles.

Then, more distinct still, they heard the far-off yowl of a cougar. Yet it wasn't quite like the cougar utterances that Dan had heard on previous nights. It was not so high, so piercing and triumphant; but had rather an angry, snarling tone made up "ows" and broad, nasal "yohs." It came tingling up thru hundreds of yards of still forest; and both of them leaned forward.

"Another deer killed," Dan suggested softly.

"No. Not this time. He missed, and he's mad about it. They often snarl that way when they miss their stroke, just like an angry cat. But listen—"

Again they heard a sound, and from some far-lying ridge, they heard a curious echo. So far it had come that only a tremor of it remained; yet every accent and intonation was perfect, and Dan was dimly reminded of some work of art cunningly wrought in miniature. In one quality alone it resembled the cougar's cry. It was unquestionably a wilderness voice—no sound made by men or the instruments of men; and like the cougar's cry, it was simply imbued with the barbaric spirit of the wild. But while the cougar had simply yowled in disappointment, a sound wholly without rhythm or harmony, this sound was after the manner of a song, rising and falling unutterably wild and strange.

CHAPTER II

Dan felt that at last the wilderness itself was speaking to him. He had waited a long time to hear its voice. His thought went back to the wise men of the ancient world, waiting to hear the riddle of the universe from the lips of the Sphinx, and how he himself—more in his unconscious self, rather than conscious—had sought the eternal riddle of the wilderness. It had seemed to him that if once he could make it speak, if he could make it break for one instant its great, brooding silence, that the whole mystery and meaning of life would be in a measure revealed. He had asked questions—never in the form of words but only ineffable yearnings of his soul—and at last it had responded. The strange rising and falling song was its own voice, the articulation of the very heart and soul of the wilderness.

And because it was, it was also the song of life itself—life in the raw, life as it is when all the superficial

things that blunt the vision had been struck away. Dan had known that it would be thus. It brought strange pictures to his mind. He saw the winter snows, the spirits of Cold and Famine walking over them. He saw Fear in many guises—in the forest fire, in the landslide, in the lightning cleaving the sky. In the song were centered and made clear all the many lesser voices with which the forest had spoken to him these two months and which he had but dimly understood—the passion, the exultation, the blood-lust, the strength, the cruelty, the remorseless, unceasing struggle for existence that makes the wilderness an eternal battle ground. But over it all was sadness. He couldn't doubt that. He heard it all too plainly. The wild was revealed to him as it never had been before.

"It's the wolf pack," Lennox told him softly. "As long as I have been in the mountains, it always hits me the same. The wolves have just joined together for the fall rutting. There's not another song like it in the world."

Dan could readily believe it. The two men sat still a long time, hoping that they might hear the song again. And then they got up and moved across the cleared field to the ridge beyond. The silence closed deeper around them.

"Then it means the end of the summer?" Dan asked.

"In a way, but yet we don't count the summer ended until the rains break. Heavens, I wish they would start! I've never seen the hills so dry and I'm afraid that either Bert Cranston or some of his friends will decide it's time to make a little money fighting forest fires. Dan, I'm suspicious of that gang. I believe they've got a regular arson ring, maybe with unscrupulous stockmen behind them, and perhaps just a penny-winning deal of their own. Suppose you know about Landy Hildreth—how he's promised to turn state's evidence that will send about a dozen of those vipers to the penitentiary?"

"Snowbird told me about it."

"He's got a cabin over toward the marshes, and it has come to me that he's going to start tomorrow, or maybe he has already started today, down into the valley to give his evidence. Of course, that is deeply confidential between you and me. If the gang knew about it, he'd never get thru the thickets alive."

But Dan was hardly listening. His attention was caught by the hushed intermittent sounds that are always to be heard, if one listens keenly enough, in the wilderness at night. "I wish the pack would sound again," he said. "I suppose it was hunting."

"Of course. And there is no living thing in these woods that can stand against a wolf pack in its full strength."

"Except man, of course."

"A strong man, with an accurate rifle, of course, and except possibly in the starving times in winter he'd never have to fight them. All the beasts of prey are out tonight. You see, Dan, when the moon shines, the deer feed at night instead of in the twilights and the dawn. And of course the wolves and the cougars hunt the deer. It may be that they are running cattle, or even sheep."

But Dan's imagination was aflame. He wasn't content yet. "They couldn't be—hunting man?" he asked.

"No. If it was midwinter and the pack was starving, we'd have to listen better. It always looked to me as if the wild creatures had a law against

killing men, just as humans have.

They've learned it doesn't pay—something the wolves and bears of Europe and Asia haven't found out. The naturalists say that the reason is rather simple—that the European peasant, his soul scared out of him by the government he lived under, has always fled from wild beasts. They were tillers of the soil, and they carried hoes instead of guns. They never put the fear of God into the animals and as a result there are quite a number of true stories about tigers and wolves that aren't pleasant to listen to. But our own frontiersmen were not men to stand any nonsense from wolves or cougars. They had guns, and they knew how to use them. And they were preceded by as brave and as warlike a race as ever lived on the earth—armed with bows and arrows. Any animal that hunted men was immediately killed, and the rest found out it didn't pay."

"Just as human beings have found out the same thing—that it doesn't pay to hunt their fellow men. The laws of life as well as the laws of nations are against it."

But the words sounded weak and dim under the weight of the throbbing darkness; and Dan couldn't get away from the idea that the codes of life by which most men lived were forgotten quickly in the shadows of the pines. Even as he spoke, man was hunting man on the distant ridge where Whisperfoot had howled.

Bert Cranston, head of the arson ring that operated on the Umpqua Divide, was not only beyond the pale in regard to the laws of the valleys, but he could have learned valuable lessons from the beasts in regard to keeping the laws of the hills. The forest creatures do not hunt their own species, nor do they normally hunt men. The moon looked down to find Bert Cranston waiting on a certain trail that wound down to the settlements, his rifle loaded and ready for another kind of game than deer or wolf. He was waiting for Landy Hildreth; and the greeting he had for him was to destroy all chances of the prosecuting attorney in the valley below learning certain names that he particularly wanted to know.

There is always a quality of unreality about a moonlit scene. Just what causes it isn't easy to explain, unless the soft blend of light and shadow entirely destroys the perspective. Old ruins will sometimes seem like great misty ghosts of long-dead cities; trees will turn to silver; phantoms will gather in family groups under the cliffs; plain hills and valleys will become, in an instant, the misty vales of Fairyland. The scene on that distant ridge of the Divide partook of this quality to an astounding degree; and it would have made a picture no mortal memory could have possibly forgotten.

There was no breath of wind. The great pines, tall and dark past belief, stood absolutely motionless, like strange pillars of ebony. The whole ridge was splashed with patches of moonlight, and the trail, dimming as the eyes followed it, wound away into the utter darkness. Bert Cranston knelt in a brush covert, his rifle loaded and ready in his lean, dark hands.

No wolf that ran the ridges, no cougar that waited on the deer trails, knew a wilder passion, a more terrible blood-lust than he. It showed in his eyes, narrow and never resting from their watch of the trail; it was in his posture; and it revealed itself unmistakably in the curl of his lips. Something like hot steam was in his brain, blurring his sight and heat-

ing his blood.

The pine needles hung wholly motionless above his head, but yet the dead leaves on which he knelt crinkled and rustled under him. Only the keenest ear could have heard the sound; and possibly in his madness, Cranston himself was not aware of it. And one would have wondered a long time as to what caused it. It was simply that he was shivering all over with hate and fury.

A twig cracked, far on the ridge above him. He leaned forward, peering and the moonlight showed his face in unsparing detail. It revealed the deep lines, the terrible, drawn lips, the ugly hair long over the dark ears. His strong hands tightened upon the breech of the rifle. His wiry figure grew tense.

Of course, it wouldn't do to let his prey come too close. Landy Hildreth was a good shot too, young as Cranston, and of equal strength; and no sporting chance could be taken in this hunting. Cranston had no intention of giving his enemy even the slightest chance to defend himself. If Hildreth got down into the valley, his testimony would make short work of the arson ring. He had the goods; he had been a member of the disreputable crowd himself.

The man's steps were quite distinct by now. Cranston heard him fighting his way thru the brush thickets, and once a flock of grouse, frightened from their perches by the approaching figure, flew down the trail in front. Cranston pressed back the hammer of his rifle. The click sounded loud in the silence. He had grown tense and still, and the leaves no longer rustled.

His eyes were intent on a little clearing, possibly one hundred yards up the trail. The trail itself went straight thru it. And in an instant more, Hildreth pushed thru the brush and stood revealed in the moonlight.

If there is one quality that means success in the mountains it is constant, unceasing self-control. Cranston thought that he had it. He had known the hard schools of the hills; and he thought no circumstance could break the rigid discipline in which his mind and nerves held, his muscles. But perhaps he had waited too long for Hildreth to come; and the strain had told on him. He had sworn to take no false steps; that every motion he made should be cool and sure. He didn't want to attract Hildreth's attention by any sudden movement. All must be cautious and stealthy. But in spite of all these good resolutions, Cranston's gun simply leaped to his shoulder in one convulsive motion at the first glimpse of his enemy as he emerged into the moonlight.

The end of the barrel struck a branch of the shrubbery as it went up. It was only a soft sound; but in the utter silence it traveled far. But a noise in the brush might not have been enough in itself to alarm Hildreth. A deer springing up in the trail, or even a lesser creature, might make as pronounced a sound. It was true that even unaccompanied by any other suspicious circumstances, the man would have become instantly alert and watchful; but it was extremely doubtful that his muscular reaction would have been the same. But the gun barrel caught the moonlight as it leaped, and Hildreth saw its glint in the darkness.

(Continued Next Week.)

A woodlot is just as deserving of care and good treatment as is the garden, orchard or the pet horse.

A Story for Children

"How the Bunnies Were Saved"

THE Bunny household was in great excitement. Father Bunny had closed up the back door to keep the house warmer. Now, he decided it must be opened and quickly so he set to work.

First, he pulled down the props and then started to dig. The dirt flew in his eyes but he must not stop. The sounds were getting closer and closer and he could hear the hunters shouting to the dogs. Poor Father Bunny grew so tired he could hardly dig, but then, he thought of his poor frightened wife and children and he worked faster and faster. At last, a light appeared and then it was easy except that he must be very careful not to make a noise.

Finally the door was opened again and now he must get his family ready for a quick flight. So he spoke very harshly, something he never had done before, but he knew their lives were in great danger and there was no time to be lost.

"Hurry!" he said, "run out that door as quickly and quietly as you can after me. Follow me and don't look back! Ready, now, here I go!"

So saying, Father Bunny dashed out the door and across the ground. Mother Bunny and the two small Bunnies followed. On they went, over fallen trees and thru bushes until at last, Father Bunny led them into an old hollow tree. There they lay panting for breath. They did not go back to their old home but built a new one the next day where the hunters could not find them.—L. M. K.

THE BABY'S PILLOW

"So tired, mamma!" our darling one whispered when the day was done, "And climbed upon my knee. 'This is the nicest place to rest—' His curly head upon my breast— He placed so trustfully. We thoughtless mothers little know How far each day the children go.

If we could measure all the miles They travel, with their tears and smiles. We should not chafe and fret Because they leave their books and play.

And come to us at close of day, Their cheeks with tear-drops wet; Or think it such a grievous wrong They ask for story or for song.

"So tired, mamma! A story tell To baby; one he likes so well. About the 'Blessing Man' Who had that gentle, loving look, And in His arms the children took; Please, mamma, if you can." And so I told the story o'er As I had told it oft before.

But at the close that night I said, "Christ had not where to lay His head

When He was tired, my child. 'Foxes have holes, the birds have nests,' And children have their mother's breasts."

The baby's blue eyes mild Looked into mine, and then they strayed Where his own wee soft bed was made.

"I wish that I'd been there that time,"

He gently said, "I'd given mine— My little pillow white— I'd let Him have it, too, to keep, So he could have a place to sleep

As I do every night. 'Mamma, do tell Him that I would Give Him my pillow if I could."

Not Impressed

"Here's a very fine landscape, sir," said the art dealer. "It's only \$10,000."

"Why, there's nothing in that picture but a couple of cows and a pasture," said the war millionaire.

"True, but it's a work of art."

"Umph! I could buy the land and the cattle for \$10,000."—Birmingham Age-Herald.



True Value DAIRY FEED

It's No Fun to Get Up Early in Winter

It's no fun to get up early in winter—milk a whole string of cows and find they are producing only a small amount of milk. It kind of takes the "pep" out of a fellow—especially when prices for milk are none too high.

There's always a reason for low milk production—You may have the best producers—housed in a warm, well-ventilated barn—with every known convenience at hand, but, if your cows are not being fed a *truly* productive ration, they will not produce as *much* milk as they are capable of producing.

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The Name Describes It

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True Value Dairy Feed and Record Maker Dairy Feed are truly *productive* rations—They supply just what a cow requires for maintaining her bodily vigor, and producing the maximum amount of milk.

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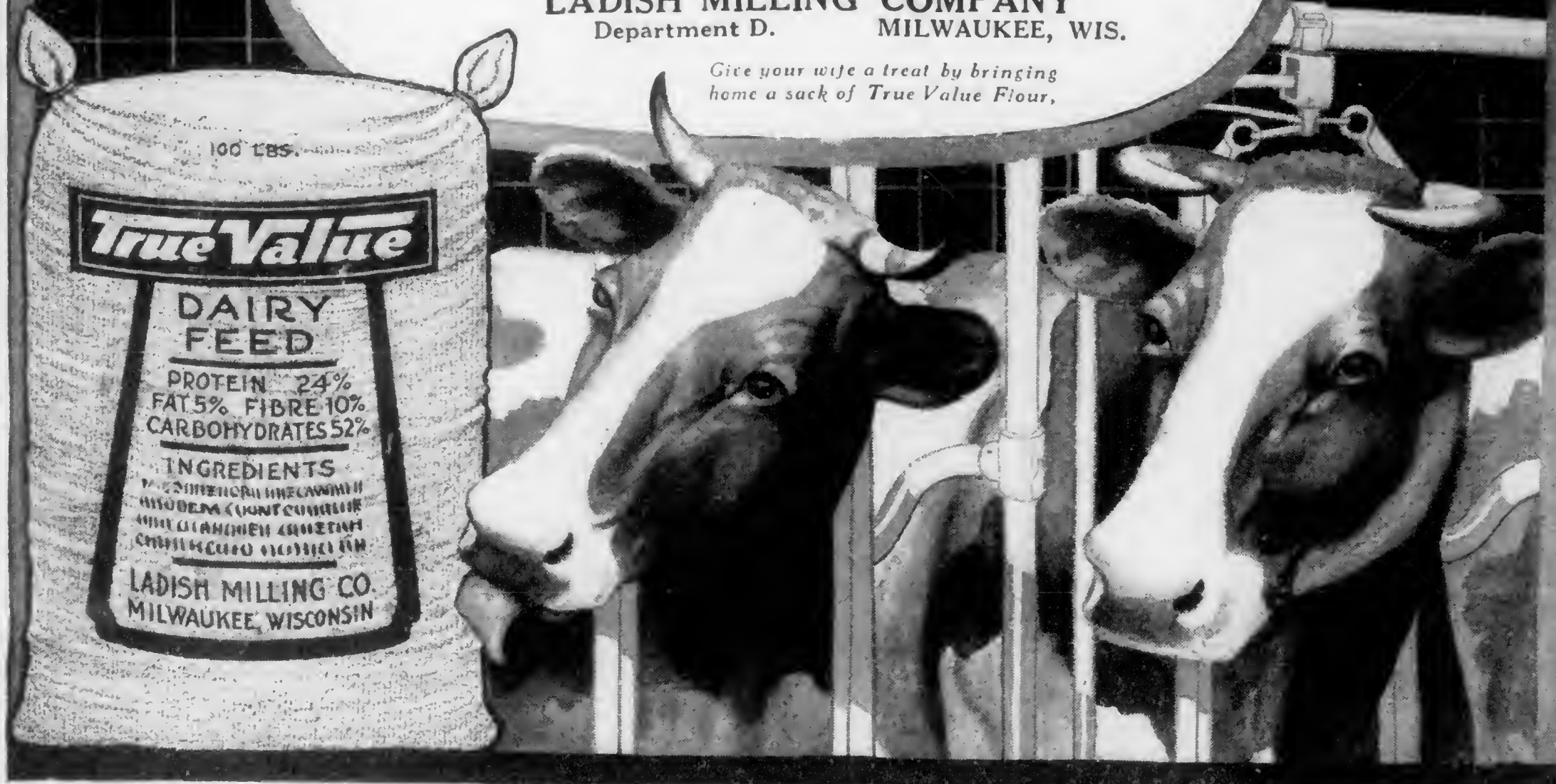
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PHILADELPHIA, PA., SATURDAY, JANUARY 22, 1921

75 Cents per Year

A Plea for Higher Yields Per Acre

Experiments Show That High Yields Are Better for the Farm and the Farmer

By Dr. J. G. LIPMAN
Dean New Jersey Experiment Station

fertilizer returned handsome dividends to the farmers.

THE department of soils of the Ohio State University is publishing a monthly leaflet under the title "Timely Soil Topics." In the September issue of these leaflets Professor J. I. Falconer makes a strong plea for higher crop yields per acre on the ground that higher yields are not only more profitable, but that they also provide for the more effective maintenance of soil fertility. In order to prove his case he makes use of the results obtained in the soil fertility experiments conducted by the Ohio Experiment Station at Wooster.

A four-year rotation consisting of corn, oats, wheat and clover is employed in this experiment. The corn receives an application of 10 tons of manure reinforced with 40 pounds of acid phosphate per ton. The manure is spread on the clover sod in the fall and plowed under in the spring. The only other crop in the rotation which received a direct application of plantfood is the wheat. The application for this crop is 400 pounds of a complete fertilizer per acre. Aside from the manure and fertilizer already mentioned, ground limestone, at the rate of two tons per acre, is spread on the plowed ground before the planting of the corn. As a result of this treatment the four 10-acre fields included in the experiment have averaged, in 15 years, 75 bushels of shelled corn, 62 bushels of oats, 35 bushels of wheat and 3 tons of hay per acre. This compares very favorably with the average yields for the entire state of Ohio for the period 1910-1919. The yields were: 38.5 bushels of corn; 17.1 bushels of wheat; 36.4 bushels of oats and 1.43 tons of hay per acre. The question now arises whether the higher yields at Wooster really gave a greater net profit per acre than did the lower yields obtained with a smaller expenditure of labor and plantfood on the average farm in Ohio. To answer this question the writer cites farm management studies in which approximately the same number of farms whose crop yields were designated as poor, fair and good were compared. The comparison shows that in the first group the value of crops per day of labor was \$11.92. In the second group it was \$15.01. In the third group it was \$18.01. Evidently, therefore, the higher yields paid much better than the lower yields for the labor invested in the crop. Other

From the cost standpoint the higher yields are relatively cheaper, since a number of items which enter into the production costs are not affected by the yields. Thus in the case of corn 65 per cent of the costs would be the same for a 60- and 40-bushel yield per acre. In the case of wheat, 70 per cent of the total costs would be the same for a 24- and 16-bushel yield per acre. As the author puts it: "The farmer who studies carefully his crop yields in relation to his farm business, and who balances the increased costs of securing larger yields against the increased returns, usually will find that the larger yields will give the greater net return for the labor and capital invested."

To what extent the individual farmer will find it to his advantage to reduce his crop acreage in order that he might farm a part of it more intensively will depend on local as well as general conditions. The more important factors that must be reckoned with in this connection are the cost of land, labor and fertilizer on the one hand, and the market value of the crops on the other. However, after all is said and done, the tendency in the United States is toward more thorough tillage and the more generous use of fertilizers. The effect of this condition is apparent in the very slow, but nevertheless, quite distinct increase in the average crop yields per acre. As time goes on this tendency will become more pronounced here as it has become in the industrial countries of Europe. Newer and more economical methods for manufacturing soluble phosphates; the increasing supply of by-product ammonia from our coke ovens; the increasing production of air nitrates, and the more intelligent use of potash and lime will of necessity stimulate a more liberal feeding of crops. This will be still further favored by the use of more concentrated fertilizers whose handling and transportation should be relatively cheaper. All told, then, the rapid growth of the non-agricultural population of this and of other lands, the improved means of communication and transportation, the better appreciation of quality in food products, specialization in cropping, and the further extension in the



"COMRADES"

are also told that 36 farmers in Scioto County raised, in 1919, an average of \$2,855 worth of crops on 65 acres at an average expenditure of \$130 for manure and fertilizer. The most profitable five farms in this group produced \$3,445 worth of crops each at an average manure and fertilizer cost of \$226. It is quite clear, therefore, that the larger investment in manure and

izers whose handling and transportation should be relatively cheaper. All told, then, the rapid growth of the non-agricultural population of this and of other lands, the improved means of communication and transportation, the better appreciation of quality in food products, specialization in cropping, and the further extension in the

(Continued on Page Three).

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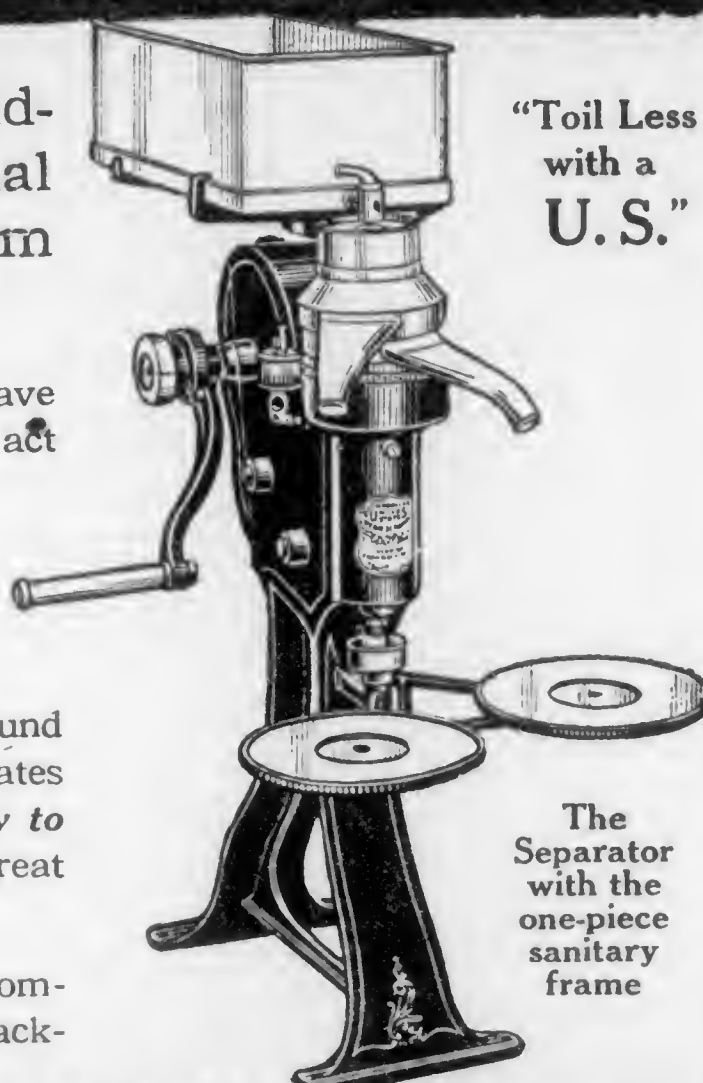
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A Plea for Higher Yields Per Acre

(Continued from Page One).

use of labor-saving machinery and devices will all tend to encourage larger yields per acre.

It may not be amiss to consider briefly the ultimate effect that the method of cropping and fertilization described above will have on the fertility of the land. In the four-year rotation in question there is being removed in the 75 bushels of corn 120 pounds of nitrogen, 40 pounds of phosphoric acid and 80 pounds of potash. In the 62 bushels of oats 60 pounds of nitrogen, 22 pounds of phosphoric acid and 50 pounds of potash. In the 35 bushels of wheat 60 pounds of nitrogen, 23 pounds of phosphoric acid and 37 pounds of potash. In the 3 tons of clover hay, 125 pounds of nitrogen, 30 pounds of phosphoric acid and 75 pounds of potash. The total quantity of the three constituents removed in the four crops would correspond to 365 pounds of nitrogen, 115 pounds of phosphoric acid and 235 pounds of potash. However, in the case of the corn, oats and wheat there has been lost from the soil by leaching at least half as much nitrogen as was taken up by the crop; hence the entire loss of nitrogen has been 485 pounds rather than 365 pounds. But the nitrogen contained in the clover was largely taken up from the air, and the roots and stubble of the clover added to the soil approximately 60 pounds of nitrogen. Hence, the four crops of the rotation caused the soil to lose 300 pounds of nitrogen every four years. From this amount there should be subtracted 110 pounds furnished by the 10 tons of manure and 400 pounds of fertilizer. There should also be subtracted from this amount 20 to 25 pounds of nitrogen furnished in each four-year period by rain, snow and dew. At best, however, the method of cropping practiced at Wooster would cause a net loss to the land of approximately 150 pounds of nitrogen in each four-year period. Furthermore, there is every probability that the clover will sooner or later fail to grow satisfactorily and other legumes will have to take its place. Under such conditions, the fixation of air nitrogen may not be as large as that indicated above. For this reason it must be assumed that in the course of time more manure or fertilizer nitrogen will have to be applied, or the rotation modified to allow the addition by means of legumes of larger quantities of nitrogen to the soil. Otherwise, the maintenance of the yields at the present high level will not be possible.

As to the balance of phosphoric acid and potash, it will be observed that of the first of these there are being removed in each four-year period 115 pounds per acre. The offset to this loss is represented by the 140-150 pounds of phosphoric acid supplied by the manure and fertilizer. The net gain is, therefore, approximately 25-40 pounds in each four-year period. Obviously, then, adequate provision is being made for keeping up the needed supply of available phosphoric acid in the soil. In the case of the potash the net loss in each four-year period is at least 125-150 pounds per acre. It may not be felt for a very long time. Nevertheless, even in this case the time will come when corn and clover will call for more generous fertilization with potash if the high yields are to be maintained. From what has been said above it follows that the maintaining of high crop yields is less costly, from the standpoint of fertilization, on the newer soils. Gradually, sometimes almost imperceptibly, the need for larger additions of available plant-food becomes more pronounced. When this need comes it is usually met, for the older soils return larger net profits where the yields are kept at a high level. This is true for practically all conditions where available plantfood, rather than climate or insects and plant diseases, is the limiting factor of production.—J. G. Lipman.

Home-Mixing of Fertilizer

There is an old trite saying that is quite applicable in a discussion on the subject, namely, "It is hard to teach an old dog new tricks." This saying never stood out more boldly than it does when trying to convince farmers to purchase ingredients or raw materials and mix them at home. The average farmer does not feel competent to mix his own goods; and he likes to work along the line of least resistance. Again, many farmers buy ready mixed goods because they can obtain six to eight months' credit, a thing that cannot very well be done when raw materials are purchased.

Slowness in changing is an attribute not hard to develop in view of the fact it has been inherited thru many generations. This can be readily seen when we observe the attitude of farmers in the evolution of agriculture thru the last century. When David Peacock invented and introduced the first cast iron plow, it was ridiculed by many farmers. They claimed that the metal that wore off the plow would poison the soil, and not as good crops could be grown as could be by stirring the surface with the old crooked stick. But that plow had its day and was used for many years until superceded.

For a quarter of a century influences have been brought to bear to induce farmers to mix their own fertilizers and never during all that time was it more advantageous than at the pres-

nitrogen they carry to the growing crop. But why use numerous carriers of nitrogen in any one mixture fertilizer? Two or three at most is all sufficient. For the last couple of years the writer has used nitrate of soda only; because it was the best, also the cheapest. Where a farmer must have a fertilizer, the nitrogen content of which must last thru the growing season, he should have at least one carrier in an organic compound like blood, fish, or high grade tankage. These are named in their order of availability, together with their agricultural value. On truck or market garden crops where an after side-dressing can be applied during the vigorous growing season, nitrate of soda will give best results, and for the least money.

Many fertilizer companies put great stress on a bone base fertilizer. This is misleading because very little fertilizers are compounded today with real animal bone as a base. Dissolved South Carolina rock, or acid phosphate as it is known in the trade, forms the base of most all commercially mixed fertilizers today. Many farmers think they are buying a more valuable goods if it has an animal bone base, when in reality it is no better.

The phosphoric acid in acid phosphate is all available to the plant when applied, while that contained in animal bone, either raw or steamed, must decay before it can give up its plant food content; hence in animal bone it is much slower.

Potash needs no discussion; our main supply is the German potash salts, either sulphate or muriate; muriate is the one mainly used. In view of the fact that many of our soils have become depleted in this valuable plant food element, due to its high cost during the war, the writer thinks it advisable to use from 3 to 6 per cent even at present prices.

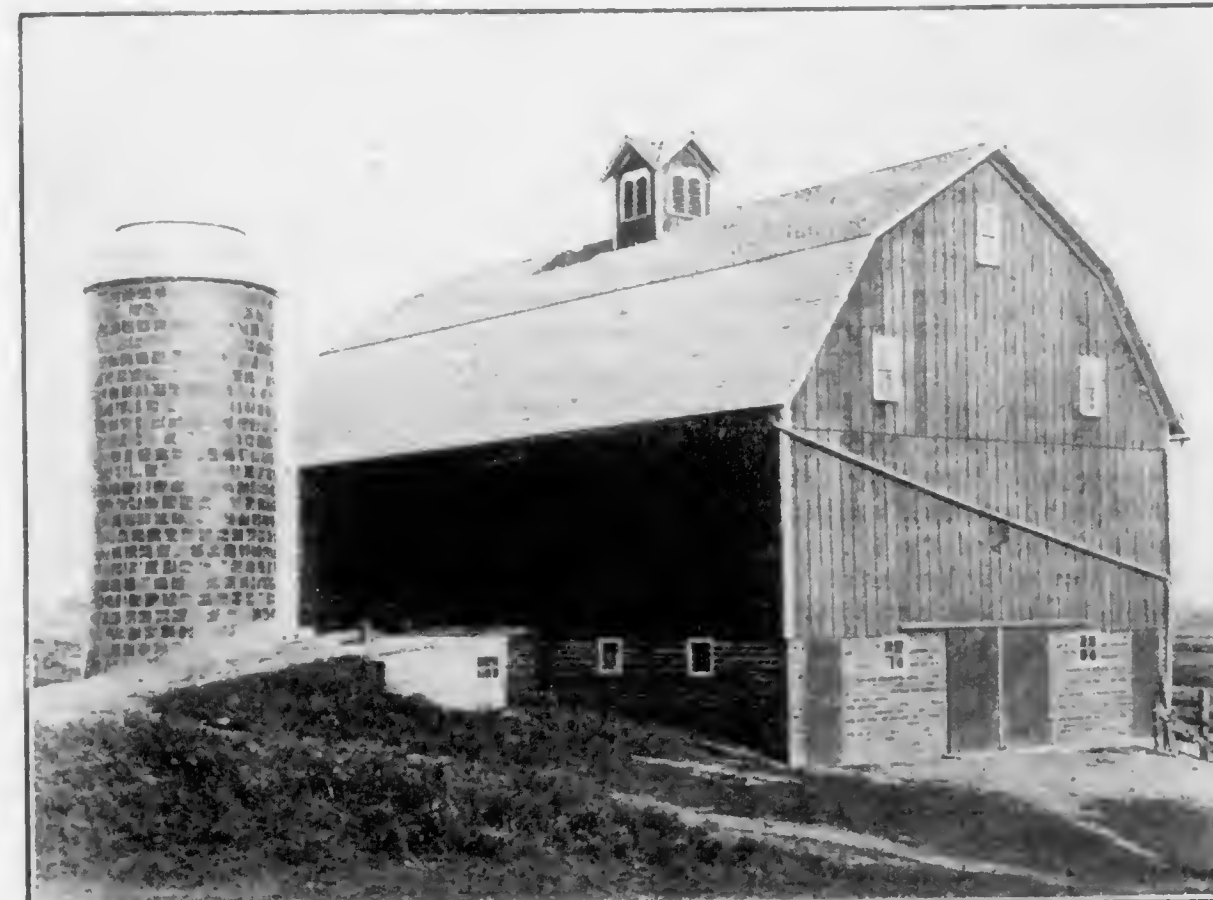
We have discussed the various ingredients that go into a fertilizer. Let us consider these special-crop fertilizers upon which so much stress is laid. For example, "Corn Special," "Special Truck Grower," etc. What compound or mixer can build up such a plant food mixture? What would suit on one man's farm and crops, would not suit on an adjoining farm. The thing hinges on the kind of soil and previous cropping; hence, if the commercial mixer makes his product rich enough to be safe on all soils,

many purchasers will be paying for excess plant food. This is a strong point in favor of home mixing. The farmer can build his analysis to suit his individual needs.

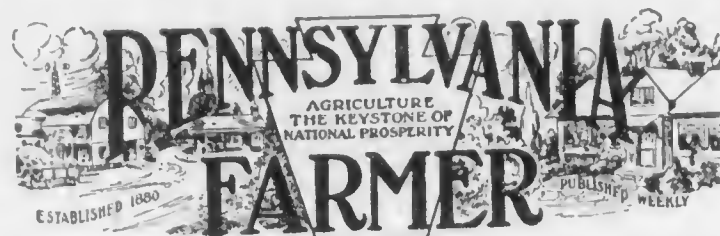
Now let us see what a 4-8-6 fertilizer (or better) can be compounded for at home. Nitrate of soda can be bought today for \$60 per ton. This means \$4 per unit of nitrogen (not ammonia). In blood, fish or tankage, it will cost \$4 per unit of ammonia. Acid phosphate, 16 per cent can be purchased, freight paid to most stations for \$24 per ton reduced to unit basis is \$1.50. Potash is \$2.20 per unit. These prices are for car-load lots.

If nitrogen and ammonia carriers cost us \$4 per unit and we have four units in this fertilizer, we multiply the cost, \$4, by the number of units (4) and we have \$16. Next, we have 8 units of phosphoric acid in the formula. A unit of this costs \$1.50. Multiply this by 8 and we have \$12. Last, we have 6 per cent of potash, which at \$2.20 per unit, will cost \$13.20; total cost \$41.20. In order to obtain this in proper amounts at the same time deriving our ammonia and nitrogen from two sources, nitrate of soda and blood analyzing 12 per cent of ammonia, half our percentage from each we want 266 pounds of nitrate of soda, analyzing 15 per cent nitrogen; this gives us 40 pounds nitrogen or nearly 54 pounds of ammonia; 333 pounds of 12 per cent blood or 400 pounds of 10 per cent ground fish will give us 40 lbs. more of ammonia; now we have 80 lbs.

(Continued on Page 17).



Substantial and Well-kept Farm Buildings



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PHILADELPHIA, PA., JANUARY 22, 1921

VOLUME 49 NUMBER 4

OUR JOB is to serve our readers. Whenever you are puzzled, write to us and we will help you if we can.
—The Editors.

The dogmas of the past are inadequate to the stormy present; the occasion is piled high with difficulty and we must rise to the occasion—Lincoln

The Contest Articles

A GOODLY number of articles have come in in response to our request for papers giving the personal experience of readers with tractors and milking-machines, and in improving farm homes. Pressure of work has prevented a prompt critical examination of all these papers, but we have seen enough to know that in the main they are valuable and they will be edited and most of them used as soon and as fast as time and space permit. This is the kind of information our readers like and which we are always glad to receive and publish.

Crop Insurance

IT HAS been said that farming is the biggest gambling game of anything in which men engage. Of course, the farmer has nothing of the spirit of the real gambler about him but there are so many elements of uncertainty in the business that the end cannot be seen from the beginning—hence the saying. One of the most frequent statements made by farmers during the past year is, "I did not get the cost of production." Farming can be conducted longer without a money profit than can any other business, but even farmers would be forced to the wall very soon if they fail to get enough returns to pay the cost of production. For the same reason that they take out fire insurance, to re-emburse them in case of loss by fire, farmers are beginning to investigate the idea of crop insurance so as to be assured of getting back the cost of production in case of crop failure from any cause. Some sections have been insuring against specific damage such as hail, frost, flood, etc., but general crop insurance against failure from any and all causes has just begun. We should be glad to have letters from any of our readers who have had experience in this line of insurance telling us how it worked out.

Learn to Advertise

WE HAVE frequently mentioned the fact that farmers have yet to learn to practice one of the arts of business and that is the advertising of their products. We are not saying this in the interest of Pennsylvania Farmer, for we realize that the class which farmers would wish to reach is city consumers and they are not readers of this paper. The sale and use of almost any food product may be increased by judiciously

Pennsylvania Farmer

and persistently presenting the arguments for them thru the printed page. While it is possible that the total sum of food might not be materially increased, yet certain foods may be and have been. In the case of milk, fruit and vegetables the increased consumption of them would be beneficial to the human race even at the expense of some other classes of food. But first the public must be educated as to their value and economy. On the question of advertising milk, Milk News publishes a pointed article from which the following is quoted:

"Dairymen have failed to successfully sell their own products; moreover, they have been extremely slow to recognize their relations between dairy products and publicity advertising and a fair and equitable price for themselves. Very little use has been made by dairymen of the tremendous selling power of advertising which is so freely employed in all other lines of the industry.

"The trouble with the dairyman has been that he has devoted too much of his time to price controversies, which, after all, have had but a small influence in bringing about higher prices."

Profitable Production

A GOOD BIT of the twaddle about the "encouragement of agriculture" is inspired by the same kind of spirit that animated the monkey while he encouraged the cat to pull the chestnuts out of the fire for him. The cat got nothing for herself and quit. A fair and just recompense for honest effort is the kind of encouragement that never fails to bring results from any class of producers, but farmers are often compelled to toil on without the stimulus of this kind of encouragement. If the consumers of the world wish to make sure of a continual supply of something to eat, let them join with farmers in plans that will assure "a fair and just recompense" to producers of food and an abundant supply at fair prices will always be forthcoming.

The watchword for farmers which Pennsylvania Farmer suggests is Profitable Production first, and Increased Production is needed. We have little sympathy with any interest which continually cries for increased production regardless of the economic phase of the question. On the other hand, we believe in the adoption of methods and practices which will increase the returns per acre and per day's labor. This does not mean an increase in the total production, necessarily, because the farming of fewer acres with increased yields will return the greater profits up to a certain point. We would suggest the careful reading of the first page article by Dr. Lipman this week. We believe no one will deny that the chances of profit are greater for the farmer who uses such methods as will produce 1,000 bushels of potatoes on five acres, rather than poorer methods which will necessitate the cultivation of ten acres to obtain 1,000 bushels. It is this kind of better agriculture that we urge. This principle will not necessarily increase the total production, but it will increase the profits of farming.

A Sensible Veto

FARMERS and sensible people of all classes will applaud the action of President-elect Harding in requesting that no expensive preparations be made for his inauguration. It would be most inconsistent in this time of retrenchment for the Government to set an example of extravagance by appropriating public funds for that which would in no wise add to the dignity nor the efficiency of the event. Of course, there will be opposition by those who would profit by it, but we are sure that the rank and file of the people of the United States will approve Mr. Harding's stand. The said rank and file realize the hardships they will have to endure in order to raise the immense taxes made necessary by the calamitous war without adding an unnecessary dollar for things purely wasteful and unnecessary.

For the same reasons we hope the Pennsylvania Legislature will not sympathize with Governor Sproul's reported wish to send the Pennsylvania National Guard to the inauguration as public expense. There is no more reason for parading the military strength of a state at a public function than there is for displaying any other force or institution.

January 22, 1921

Farmers' Position Improving

ALTHOUGH the individual may discern little if any improvement in his own situation the fact is more and more clear that the farmer has already reached the half-way mark in passing thru the dark woods of business depression and is now on his way toward the other side. The path is not entirely straight but there is no question about its general direction.

Thus far the losses resulting from the decline have not been equally distributed. The following table based upon the November, 1920, whole sale prices compiled by the Bureau of Labor statistics shows this fact clearly. The price level of commodities during 1913 is taken as 100. The highest point attained and the November, 1920, figures are given.

		% Decr. since Highest Nov. high't 1913.	Point 1920 point.
Cloths and clothing.....	100	356	234
Farm products.....	100	246	165
Food, etc.....	100	287	195
Lumber and building ..	100	341	274
Metals and products ..	100	195	170
Miscellaneous	100	246	220
Fuel and light	100	284	258
Chemicals and drugs ..	100	222	207
House furnishings	100	371	369
Weighted total	100	272	207

It is shown that the farm products, clothing and food have declined about one-third and much more sharply than other lines. More recent figures are not now available but they would show some improvements in these relationships.

These figures may be construed into reasons for self pity on the part of the farmer but there are ample grounds for taking encouragement from them, since such disparities cannot continue. During the past two months the farmers' buying power has been at maximum disadvantage because of low prices for his own products and high prices for those he must purchase. The chances now taking place are improving his position. Lower prices for other commodities are coming as well as slightly higher prices on the principal farm products. Altho the farmer has gone half way or more thru the woods, most other groups have not yet reached that point and have farther to go before they will reach the open again.

Other lines of endeavor also can show wounds. A compilation of twenty selected industrial and railway issues show a loss of \$2,722,540,000 in the market value of their securities, compared with the high point reached during the war. Ownership of these securities is not confined to rich men but many small investors are included. The dwindling in value of these holdings is somewhat similar to a decrease in the value of the farmer's investment in land and equipment.

The farmers' dollar will gradually increase in value during the coming months, while the dollars of other lines which have not yet declined will gradually shrink from their present bloated state. "The law of compensation is universal."

Our Washington Letter

Hearings of general tariff revision before the House Ways and Means Committee, and on the Fordney Emergency tariff measure before the Senate Finance Committee, are occupying much time, and are bringing many representatives of the various interests to Washington.

The woolgrowers have presented a strong plea for a protective tariff on wool before the Senate Finance committee. F. J. Hagenbarth, president of the National Wool Growers' Association, said he was pleading for the preservation of the industry, which is facing ruin. Many Western stockmen are being sent to the market to liquidate debts.

George D. Briggs, of the National Sheep and Wool Bureau, declared that there is now in the world outside of the United States a vast accumulation of wool produced at about one-third the cost of producing wool in this country; that the wool is ready to be dumped into this country just as soon as the market shows any life, and unless this foreign wool can be held back by a protective tariff the wool industry in this country will be wiped out. Without a tariff the country is going to be without a sheep industry, and in case of war it would have to pay exorbitant prices for foreign wool.

While the bill does not include the manufactured products of wool in its schedules, John P.

January 22, 1921

Wood, representing woolen manufacturers, favored the Fordney bill as an emergency measure to save the sheep industry, with the confident expectation that the permanent tariff bill will soon give equal protection to the woolen manufacturers.

The proposition to add dairy products to the emergency tariff bill was presented by W. F. Schilling, of Northfield, Minn., president of the Twin Cities Milk Producers' Association, and A. M. Loomis, secretary of the National Dairy Union. Senator Hackney, of Minnesota, W. A. Wentworth of Iowa, and other representatives of the dairy interests have presented strong arguments in favor of a tariff on butter and cheese. Senator LaFollette of Wisconsin has agreed that he will use his best efforts to see that amendments covering these products are added to the bill before it leaves the Senate.

The sugar growers of Louisiana, in asking for more protection on sugar, testified that their industry was in just as bad a condition as that of the grain and livestock farmers. They demand a tariff which will make sugar cost the consumer eleven cents a pound.

In a discussion precipitated by the testimony of a New York City produce importer in opposition to a tariff on Bermuda potatoes, the state was made that potatoes were being shipped from Denmark to Philadelphia at a lower rate than from Allentown, Pa., a few miles away, to the Pennsylvania metropolis. The rate from Denmark to Philadelphia was given at ten cents a bushel, while the Allentown rate to Philadelphia is seventeen cents a bushel. It was also stated that potatoes were being shipped from Denmark to New York at a lower cost than from Maine to the same market.

An amendment adding canned salmon, herring and cherries to the bill, has been submitted by Senator Jones of Washington. The committee is besieged by men who want to be heard in favor of amendment or against duties on commodities in which they are interested. All this means delay for the bill, and jeopardizes its chances for success. Senator Smoot declares that "to amend this bill means that it is gone. It won't pass if it is changed." Senator Boies Penrose, chairman of the Finance Committee, has reversed his former position in regard to the emergency tariff, saying that he is in favor of the Fordney bill with a few changes. He believes the rates should be modified in some schedules. The New York bankers, it is said, fear that the legislation will result in retaliatory measures by foreign countries, which will seriously injure our American industries, and are bringing some pressure to bear against its enactment.

Commenting on the Capper-Horsman collective bargaining bill, Senator Arthur Capper of Kansas, says the friends of the measure are going before the House and Senate conferees, when they meet. The farm organization representatives will declare that they regard the Senate amendments as objectionable, and there are fair prospects that these nullifying amendments will be stricken from the bill. Senator Capper considers the bill as it passed the Senate better than no legislation. Its greatest value is the fact that it recognizes the farmers' co-operative movement. In the course of five years, he predicts, a vast development along co-operative lines will take place, as this is the only practical suggestion toward eliminating the great spread between producers' and consumers' prices. Ours is the most inefficient system of marketing in the world, and we have got to work out a practical programme that will solve the marketing problem.

In regard to the five or six bills designed to wipe out gambling in futures, Senator Capper says he does not see any conflict between his bill and the others. It is not his desire to wipe out the boards of trade. Hedging may be desirable on the part of men actually dealing in grain, but speculative and gambling in products that do not exist should be stopped. The Senator does not expect to set up something better that will take the place of the grain exchanges, he doubts if it would be wise to eliminate boards of trade. All these anti-gambling bills are being opposed by Chicago bankers.

The Federal Trade Commission has made a report to Congress, dealing with country elevators and grain marketing. The report is based upon returns of about 10,000 country elevators throughout the nation. According to this report, "commercial elevators are most important in Nebraska and the fourth Northwestern states, and independent elevators in Iowa, Kansas and the states east of the Mississippi."

Dr. T. C. Atkeson, Washington representative of the National Grange, says it is his conviction that the committee will report the bill favorably to the Senate. If it passes the Senate it will be in a different form from the House bill, which will delay it in conference. If it should go to the White House, it is believed that President Wilson will veto it, and that its friends in the Senate will not have enough votes to pass it over the President's veto. Dr. Atkeson is unqualifiedly in favor of the bill. Even if it is rejected on the tariff and the sentiment so strongly presented at the hearings in favor of the same protection for farm products that other commodities receive may be reflected in the general tariff bill which will come before Congress in an early date.—Elmer E. Reynolds.

Pennsylvania Farmer

HARRISBURG LETTER

Down to Business.—Pennsylvania's Legislature is down to business after much backing and filling and the resumption of sessions after a fortnight's intermission to permit the committees to be made up and the jobs to be apportioned in the time-honored style finds many of the members desirous of getting thru with a minimum of rows and loss of time. It might be added they are not inclined to be "meanly-mouthed," to use an expression much employed around here, in saying so. One of the things which must have impressed the legislative leaders in the convening days was the general demand that the program be worked up and worked out. For this it is more than suspected there is the hearty support of one Boies Penrose. Hence prospects are bright for a well handled session, if not the adoption of some method of getting expenditure of state money or clerical time that system city folks are so fond of lecturing the farmer about. There have been intimations at the advance of the last three sessions that the cost unit system was to be applied to hospitals where it would be found to operate as well as on the farm, but the coming of spring has put such promises among the moth balls. Governor William C. Sproul will enunciate his ideas on legislation in the first formally delivered address and then the legislative mood rates will be opened and bills will pour into the houses. Whether the admonitions of the presiding officers to enact as few laws as possible will be heeded is uncertain. In any event, the Legislature is down to business with a prospect unusually good for a beneficial session. If the men at the helm of Republican affairs wish to avoid explanations they have an easy way to do it.

Women to Take a Part.—It is evident the new women's organizations are going to make themselves felt during the session and it will have a wholesale effect. Legislators will not be likely to antagonize women by joining in raids on Sabbath or liquor laws, tinkering with the labor laws or similar matters. Where the ladies and the legislators may differ will be over the amount to be voted for mothers' pensions and the educational program. The Governor is inclined to favor various plans to increase the state's revenues and may have the support of a considerable element among the women, but Governor and legislators alike are apt to find women more or less inclined to want more information about the charities that has been commonly available.

Want to Go to a Vote.—The policy of the Sproul administration will be to have the question of a constitutional convention go to a vote of the people. This position has become stronger than ever as the result of events of the week just closed and the speeches made in Philadelphia will probably be supported by a strong declaration from the Governor. Coupled with the move for speedy submission of the question is a hope that the convention might meet next year.

Strong Weed Bill.—While Secretary of Agriculture Fred Rasmussen was presenting his preparing much legislation the last week because of a severe cold he has outlined his scheme for a new weed bill, which it is hoped will aid materially in his plans for ridding the state of noxious growths which lack of labor have made a nuisance. The secretary has had strong support from many people in his move for a good weed law. His plans for extension of state supervision and the building up of the services which he has developed are to be worked out, having received the approval of the Governor.

More Cars on the Farm.—If what State Highway officials say is true the number of automobiles and farm wagons mechanically driven to be registered for use on farms in 1920 broke all records for increase. Heavy purchases of cars for rural delivery are reported to have been made during the fall and the January 1 registration of cars has shown a surprisingly large number of automobiles on the farm. And by the same token the decrease in horses is rather more than looked for. Efforts to get complete data on farm owned cars and wagons and on live stock are under way by the statistical bureau of the Department of Agriculture.—Hamilton, Harrisburg

NEW YORK LETTER

Exporting Choice Seed.—The fame of New York state's certified seed potatoes has extended until Danish growers are purchasing seed of Cortland County growers, thru their Danish co-operative association. The seed will be used to determine its adaptability to Danish soil, climate and diseases.

Decrease in Farms.—Cortland County is one of the smaller counties, but of rather more than average prosperity. Yet, in the last 20 years there has been a decrease of 439 farms in the county. In 1900 there were 2751 farms. In 1910, 2616 farms and in 1920 but 2315 farms.

Violations of Storage Laws.—In 1920, retail dealers paid \$1182 in fines for selling cold storage eggs under false pretenses. A total of 3283 pounds of meat in cold storage was destroyed by inspectors as unfit for food and \$3594 was paid in fines for holding food over 12 months.

New York Has Fifth Place.—New York state

ranks fifth in agricultural production, according to Federal figures. In 1909 it ranked eighth; from 1914 to 1918 it ranked twelfth, in 1919 it ranked fourteenth. New York state apples, potatoes and tame hay production ranked first this year and nearly if not quite first in dairy products. Despite greatly increased yields the state's crops sold for \$2,000,000 less than in 1919, or 41.4 per cent lower than a year ago, and 3.6 per cent lower than the average the past ten years.

Action Against Milk Dealers.—For the first time in many years the State Department of Agriculture is prosecuting milk dealers who persist in violating the law by using bottles other than their own.

New Commissioner of Education.—Dr. Frank B. Gilbert, former deputy commissioner of education has been appointed commissioner to succeed Dr. Finley. Dr. Gilbert and his department are engaged in a new budget that shall conform to the new Governor's recommendations for economy. One line where saving will be made is in the imparting of physical training in elementary schools, the teachers to be required to fit themselves to give their pupils this work. Another cut will be made in Americanization work.

Big Holstein Sales.—The first sale of purebred Holsteins, under the management of the State Holstein Association, opens in Rochester this week with 140 of the state's highest class animals offered. Last week at the ninth sale of the Liverpool association 233 purebred Holsteins sold for \$69,050, or an average price of \$296 per head. The state's two champion butter and milk cows were sold, among other fine animals. The majority of the buyers were from other states. The purebred industry is looking up with promise of better conditions in dairying.

NEW JERSEY NEWS

Convention a Credit.—It is not far-fetched by any means for one who is not engaged in agricultural pursuits to say, that the 1921 convention of the farmers of the state and kindred workers held in this city was a credit to everybody participating. Representative in every detail, the gathering attracted unusual attention and admiration from thousands of persons interested in agriculture. Men and women of high standing in communities thruout New Jersey viewed at the Second Regiment Armory splendid displays of produce and stock, while in the Assembly Chamber at the Capitol, informative addresses were delivered to willing listeners on subjects of much importance to the success of the state from a farmer's viewpoint. The management of the convention was excellent. The members of the State Department of Agriculture, the officials and attaches of the State Department of Agriculture were among those present.

Resolutions adopted were: Whereas, experience with the operation of the daylight saving law has proven it to be confusing and definitely harmful to the agricultural industry without apparently adding to the efficiency of its beneficiaries, be it resolved, that we reaffirm our previous opposition to this scheme on either a municipal, state or national basis, and urge our representatives at Trenton and Washington to oppose it at all times;

"Whereas: Trespassing by hunters on private property is common during the hunting season with damage to livestock and various violations of property rights; be it resolved, that the New Jersey State Agricultural Convention favor legislation requiring the obtaining of written permission from the owner or lessee of the property to be hunted over, and request the State Fish and Game Commission to include this requirement on all hunting and fishing licenses;

"Where, the increasing use of the automobile by the criminal element renders unprotected rural districts more liable to attack, as well as rendering pursuit and capture more difficult, be it resolved, that we favor the establishment of a State constabulary that will give greater protection to the rural districts;

"Whereas, the farmers of the State of New Jersey are suffering serious financial loss from the ravages of wild animals protected by the game laws of the state, therefore, be it resolved, that the State Board of Agriculture in convention assembled recommend that in the appointment of a Fish and Game Commission, the farmers of the state be given a representation of at least fifty per cent.

"Be it resolved, that the State Agricultural convention approve the action of Commissioner of Motor Vehicles William L. Dill, in revoking the driver's license of any and all automobile drivers detected in using automobiles or any other motor vehicles to aid in stealing farm produce from the farms of the State."

Governor Edwards expressed the hope that before the expiration of his term as Chief Executive of the state, as many good roads as possible should be built in front of the farm properties in New Jersey in order that the best of facilities could be provided for the rapid transportation of farm produce from the growing points in the state to the centers of population. He asserted that he had named Charles Seabrook, of the Seabrook Farms in South Jersey, to the State Highway Board for this reason.—Kelly, Trenton.



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The Dairy Feed Market

A Discussion of Present Prices and Future Outlook of the Market

By SANDERS SOSLAND

LATE winter often witnesses a bull market for feedstuffs. Of course, there have been exceptions in recent years. In view of the abnormal influences surrounding the trade, which are more perplexing today because they have not been felt in previous winters, consumers and operators on markets are wondering whether advances will occur this year. Probably the most favorable factor so far as the usual winter bull price trend is concerned is the already low level of feeds and the sharp recessions witnessed during the fall and early winter. A reaction is a natural development, and this could be hastened by the normal enlargement in winter feeding operations. However, it is questionable whether these influences can offset the bearish tone created by the depression in live stock, the strained credit situation, the enormous supplies of various feeds in the country and the fact that deflation has not yet been terminated.

Among the feedstuffs in which Pennsylvania consumers and those of surrounding Eastern states are vitally interested and which give promise of enjoying a winter upturn in prices, cottonseed cake and meal probably are in the first rank. Few feeds have undergone as radical readjustment as the by-product of cottonseed and, having reached a level which is low compared even with the pre-war average price, it is not reasonable to anticipate any further material recessions in the market. Instead, cottonseed cake and meal are, according to close students of the trade situation, around their bottom, with moderate rallies in prices to be expected from time to time. However, it is as unound to look forward to sharp advances in the high protein feed as to anticipate still further sharp declines. Cake and meal are not in a position where radical upturns can be easily recorded, yet the consumer who has the funds and other facilities available will doubtless profit by accumulating requirements a few months ahead, possibly as late as the opening of the summer season.

Operations of cottonseed crushing plants in the South have been sharply curtailed, many of the larger mills having shut down temporarily at least. One of the important influences in the curtailed activity of crushers is the large accumulation of cottonseed oil, both crude and refined, and the inability of producers to work off their burdensome stocks because of the extremely light demand. The keen disappointment over prices being offered for seed has caused a sharp letup in the sales of the product by planters over the South, and comparatively little is now moving to mills, this also restricting operations of crushers. However, there are still large quantities of seed in hands of the planters, and while it is true that considerable will be fed and used as fertilizer, the bulk of the farm holdings must yet move to crushing plants. As the demand for cottonseed oil and cake and meal improves, crushers will increase their production, which will thus tend to check a rising market for the protein feed.

As to the demand prospects, the market is in a firmer position. Feeders have bought on a slightly more liberal scale and the retail feed distributor in the interior who has been a very small buyer thus far on the crop is now taking hold more freely, accumulating stocks for the remainder of the winter in a great many instances. This is rather significant, indicating that the retail dealer, who is in close touch with his trade, anticipates an enlarged demand from consumers. Manufacturers of mixed feeds and commercial fertilizer continue very small buyers, and foreigners display an almost total lack of interest in the market. While there is no immediate prospect that these interests will soon take hold more freely, their entrance into the market might easily start values upward. Cottonseed cake and meal of 43 per cent protein content is selling around \$26 to \$27.50 a ton in Little Rock, \$23 to \$24 at Texas points, \$26 to \$27 in Oklahoma and on a freight differential at Memphis and other southern points.

While the two high protein feeds are rather closely related, the influences surrounding linseed cake and meal do not make for as firm or strong a market as in cottonseed feed. The stocks of linseed feed in crushers' hands are burdensome, new buying is of an extremely light volume and jobbers and other handlers are providing crushers with shipping directions very slowly. The same condition prevails as to the demand for linseed oil as for cottonseed oil, the stocks being large and buying almost stagnant. But there is a large amount of flaxseed available, coming largely from Argentina, and so long as these imports continue on a liberal scale, it is improbable that any material upturns or even firm prices will be witnessed. Of course, to those who recall that at this time a year ago linseed cake and meal were bringing around \$82 a ton, basis Minneapolis, or more than double the present price, the current market may offer some bullish prospects. Still, the current level is considerably above the pre-war basis and far above a parity with cottonseed feed and oil products. Linseed feed should decline further.

A perplexing condition exists in the bran and shorts market. Bran has sold at an actual premium over brown and gray shorts, one of the few times in the history of the milling industry of the United States that such a disparity was noted. Hardly four months ago gray shorts were enjoying a very keen demand at a premium of \$20 a ton over bran, while it is true that considerable the entire value of the offal today.

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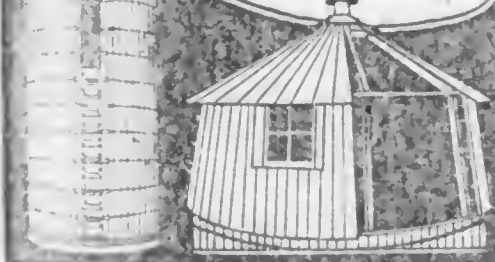
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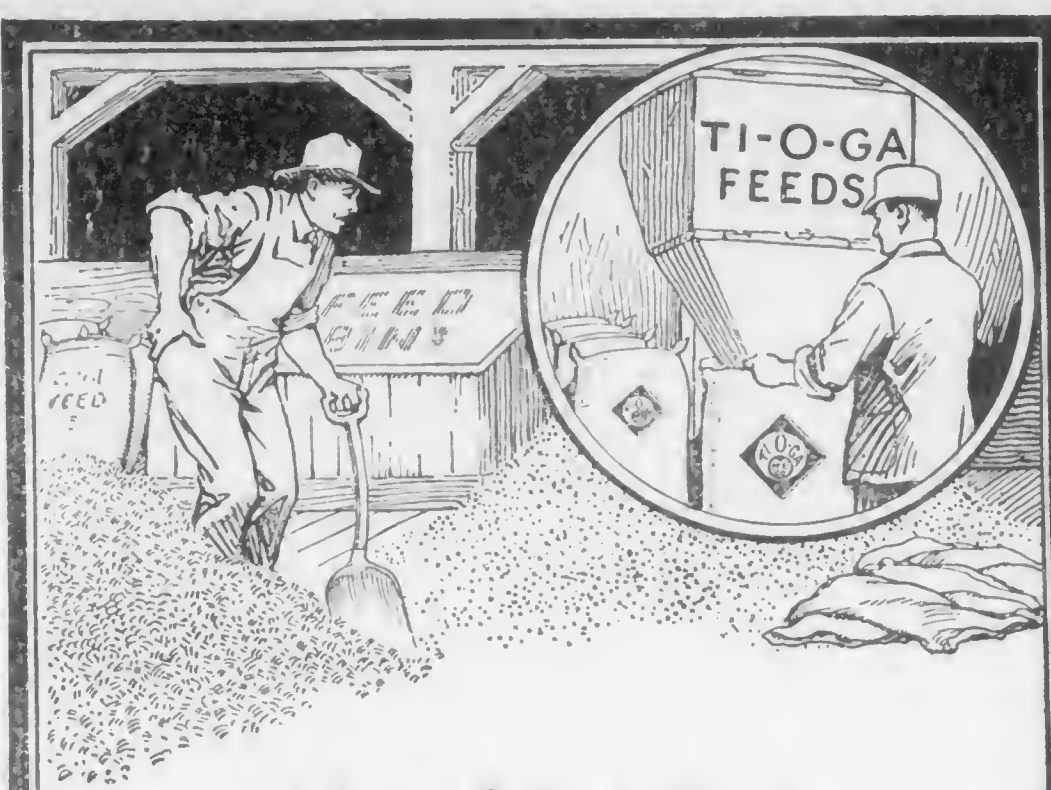
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The normal differential on shorts over bran is about \$4 a ton. The fact that the present disparity exists means that bran must recede in price. Market observers almost generally manifest a bearish attitude toward the lighter offal, while the feeling is apparent, too, that brown and gray shorts must enjoy a slight upturn. Bran is above a parity with other feeds and can easily undergo a readjustment downward in price, and this is expected to be hastened by the slight improvement in demand for flour and probable enlargement in the production by mills of the country. An over-extended short interest in the bran market, though not of pronounced proportions, has been an influence in sustaining the offal above shorts.

Bran is being quoted around \$27 a ton, basis Minneapolis, \$24.50 to \$25 in Kansas City, \$30 in St. Louis and \$37 to \$38 a ton on the Philadelphia market. For gray shorts, Kansas City quotes around \$24 to \$25 a ton for prompt or thirty-day shipment and about \$23 to \$24 for brown. Minneapolis is offering brown shorts or standard middlings around \$24 to \$25 a ton and flour middlings at \$28, with \$30 asked in St. Louis. The Philadelphia basis will figure around \$34 for brown and \$39 for gray shorts. Bran is about \$2 a ton higher than a month ago, while the shorts market is about \$2 to \$3 a ton lower. As the winter season advances, the spread between bran and shorts will widen in favor of the heavier offal. Around the time that the spring pig crop begins using feed on a large scale, shorts are at the sharpest premium over the lighter mill feed.

Dairymen of Pennsylvania and surrounding states of the East are small buyers of alfalfa hay. The feeders could make use of alfalfa hay to good advantage, but the delivered cost of the legume is too prohibitive to feed on an extensive scale. The Eastern dairymen do not look upon the prices at Western distributing markets as abnormally high, around \$22 to \$25 a ton in Kansas City, but after the exorbitant freight rates are added, the hay is on too abnormal a plane. The delivered cost in the East is around \$45 a ton. At the same time that the Eastern dairymen is complaining of the high cost of alfalfa, the producer in the West is refusing to sell because the price is too low. But this is a buyers' market, and with enormous stocks of alfalfa still in the country, lower prices must be recorded. As the movement of alfalfa from the Northwest increases as a result of the reduction in freight rates from Idaho to Kansas City, values will work down. Other consuming outlets are slow buyers of alfalfa.

Corn, oats and the sorghum grains have undergone moderate declines, but now are in a slightly stronger position than a month ago. Cash corn is bringing around 63 to 74 cents a bushel in Chicago, about 5 to 10 cents lower than last month. Oats are holding between 45 and 48 cents a bushel on most Central States and Middle West markets. Kafir and milo are selling at an abnormally low level, down to 65 cents per hundredweight in the interior of Kansas and other southwestern states and around \$1 in Kansas City, the leading distributing point for the sorghums. There is a prospect of a heavier movement of corn to market, but the almost general dissatisfaction over prices is retarding the marketings.



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HORTICULTURE

The Season's Lessons to the Fruit Growers
By Dr. J. P. STEWART

AN APPLE BUYER of the writer's crop of fruit. The amount of marketable fruit, of 2½ inches or larger, was nearly twice as great at the close of the season on the thinned trees as on the unthinned. This effect was lessened or lost altogether, however, when the trees were bearing only a light crop, before the thinning was done. This effect was observable even when the thinning was done after the June drop had been completed. In general, considerable benefit may be derived from proper thinning of heavily loaded trees, but the present evidence seems to confine this benefit to an improvement in the average size of the fruit.

The growers should also take an inventory of their recent experiences, with a view to make improvements and avoid repetitions of their mistakes, so far as possible to do so.

One of the most evident improvements needed in this connection is to get a better grade of fruit from their trees. Already some of the more wide-awake groups of growers are getting together to discuss the best means of doing this and are also getting outside talent to assist in the discussion. Their interest also seems to be running in the direction of the possibilities of thinning and of fertilization rather more than usual. The present special preference among buyers and consumers for the largest apple possible has probably had considerable influence in bringing this new interest to the front, and the writer's views have been sought as to the probable values of the two influences named, in securing the effect desired.

Improving the Grade

In the first place, we wish to state that the most important means of improving the grade of fruit harvested is by means of the spray pump. If the fruit is not properly sprayed, there is no chance of making it really acceptable by any other means.

After the spraying has been properly attended to, it may be desirable to give some attention to thinning and fertilizing. Since there is also a good deal of misapprehension as to just what may be expected from each of the latter influences, it may be well to make a few suggestions based on the most recent or extensive studies.

What Thinning Does

Many people think that thinning apples will not only materially increase the size of the fruit of that year, but that it will also have a strong tendency to increase the size of the crop the following year. In experiments carried on in West Virginia from 1912 to 1919, however, it was rather conclusively shown that "neither the tree as a whole nor the individual fruit spurs are influenced by the removal of part of the crop to such an extent that either the tree or the spurs bloom again the following season." As a result of these and other experiments therefore the authors conclude that "Fruit thinning, then, does not affect the annual bearing of apple trees."

In those experiments, however, thinning did greatly increase the average size of the fruit left on the tree, particularly in those cases in which the trees were bearing a good

What May be Expected from Proper Fertilization

Here again there is a common impression that one of the chief influences of fertilization is to increase the average size of the fruit. This may be the case to a very limited extent, as some of our own experiments have indicated, but the chief influence of the right kind of fertilization is to increase the crop of fruit.

This is accomplished chiefly by nitrate or at any rate by nitrogen fertilization, and this element tends to reduce or retard the color unless applied in relatively small amounts. In general, five pounds per mature tree of nitrate of soda, or its equivalent, are enough to reasonably stimulate the yield, and under most conditions this amount will not greatly retard the color, except possibly in such a long-season variety as the York Imperial. In such a case, early application of the fertilizer and relatively late picking will probably overcome the ill effects on color.

The chief means of increasing the average size of the fruit, however, is by increasing the available supply of moisture. This can be done either by means of proper tillage or by maintaining a sufficient mulch of straw or its equivalent. The latter will have to be attended by some protection against mice unless the trees are at least twenty years old or more.

Importance of Bulk Sales

One of the unexpected developments of the present season has been the unusual success of the bulk sales of apples. The bulk sale is generally looked upon as the least efficient and least profitable method of disposing of apples of any kind. This year, however, it is not at all uncommon to see fruit selling at about \$1.75 or better per hundred in bulk, and to see at least as good a grade of the same kind of apple selling at 75 to 85 cents in baskets, machine-graded, on the same market. On a very similar market at the same time, machine-graded apples, in barrels costing \$1.50 or more, were netting the grower about \$2.80 per barrel f. o. b. shipping point, which, after deducting the cost of the barrel and picking and packing costs, left less than fifteen cents a bushel or less than thirty cents a hundred for the fruit.

I suspect that if everyone could have guessed the future a little better this past fall, the number of apples put into barrels or other pack-

ages would have been very much less than it was. It will be interesting to note the effect of this condition on next year's prices of packages and also on the general handling of the apple crop. What are the experiences of our readers in this connection?

PEACH LEAF CURL EASILY CONTROLLED

Ranking with brown rot, yellows, and little peach, peach leaf curl, despite the ease with which it may be controlled, takes a heavy toll from the pockets of peach growers. Trees weakened by defoliation year after year, loss of crops from the defoliation and from tree weakness, and reduction in size and quality of the fruit remaining upon the tree, are some of the most disastrous effects of this disease.

Leaf curl is evidenced by the abnormal swelling and deformation of new developing leaves on the tips of the shoots, during the early spring. It attacks new growth on all portions of the tree, sometimes causing all of the leaves and much of the fruit to drop. It is worst in wet cool seasons, and near large bodies of water. After defoliation, new growth starts immediately, and the disease again attacks it, but these attacks grow less violent, and by midsummer the tree usually regains a fair set of foliage. The drain on the tree has been so severe, however, that it never fully regains its vigor during the season.

This weakening goes farther than the mere loss of leaves and some fruit. The weakened tree cannot carry a full crop the following year, and frequently the drain is so great that only a small set of fruit buds is secured.

Peach leaf curl is extremely easy to control. Thru spraying with concentrated lime-sulfur, diluted as weak as 1-15, or 4-4-50 Bordeaux, during the dormant season before the buds start to swell, will give entire control. Thoroughness is the important factor. Every bud must be coated. This can be done only by spraying thru the tree to the inside of the twigs. An attack of curl after a dormant spray has been applied is a certain indication that the spraying was carelessly done. Fall spraying, after the leaves have fallen, is as satisfactory as spring spraying.—New Jersey News Letter.

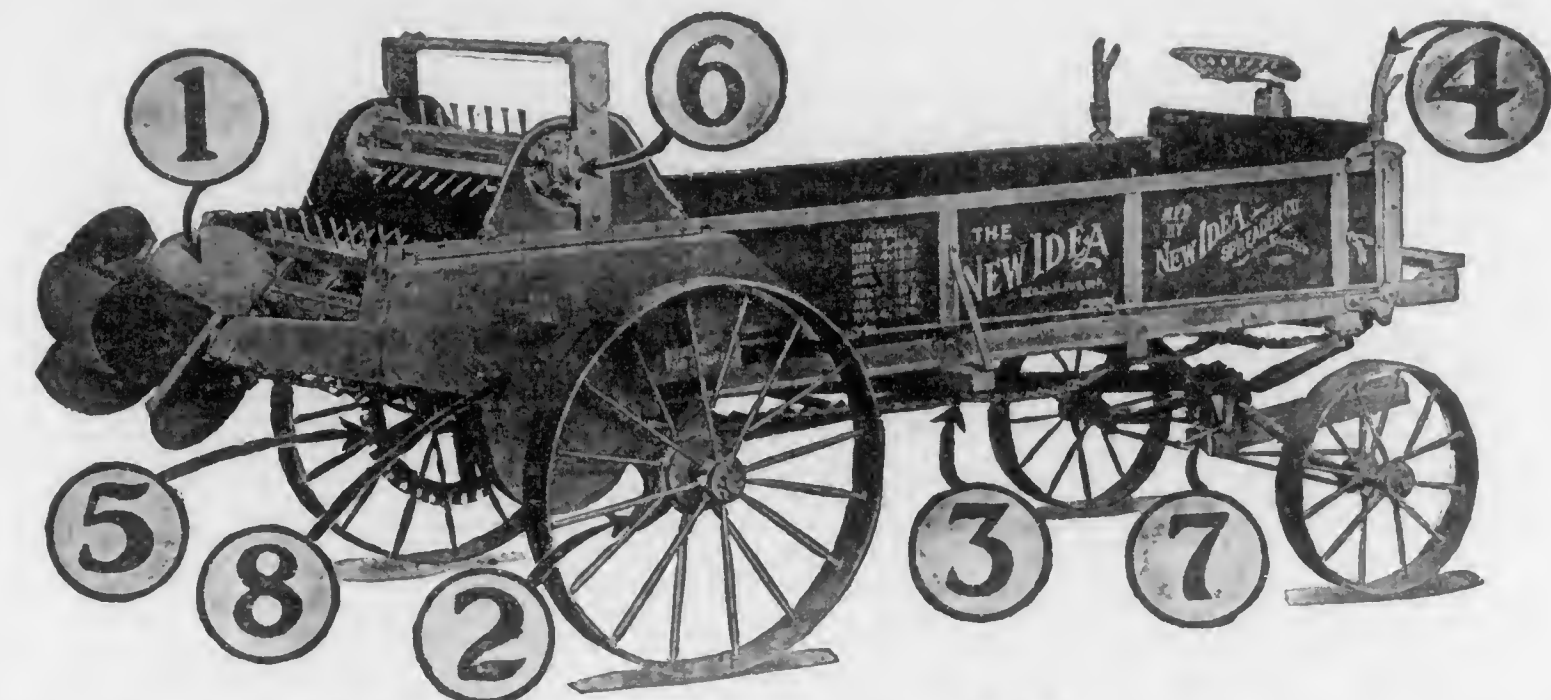
PEACH GROWING INDUSTRY THREATENED

Will history repeat itself in the destruction of the peach growing industry in Pennsylvania?

The Bureau of Plant Industry, Pennsylvania Department of Agriculture is bending all its energies to save the peach orchards of the state from destruction by peach yellows. A special survey of the industry has been undertaken in an effort to save the thousands of farmers and orchardists growing peaches from suffering a heavy loss.

A score of years ago the peach yellows swept over New Jersey, Delaware and Pennsylvania and destroyed practically every peach orchard in these states. It has only been within the past few years that the industry has recovered from this blow.

The only known and sure method of fighting the disease is to destroy the trees when the disease first appears. On account of the nature of the disease it is impossible for the average layman to detect its presence until the advance stages have been reached, by which time the entire orchard has probably become affected.



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- 1 Patented Steel Distributor. No two blades hit manure at the same time. Gives perfect distribution.
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- 4 Lever at seat regulates loads per acre. Spreads thinly or heavily as you wish.
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This little book is very much worth while reading. Better fill out the coupon now.

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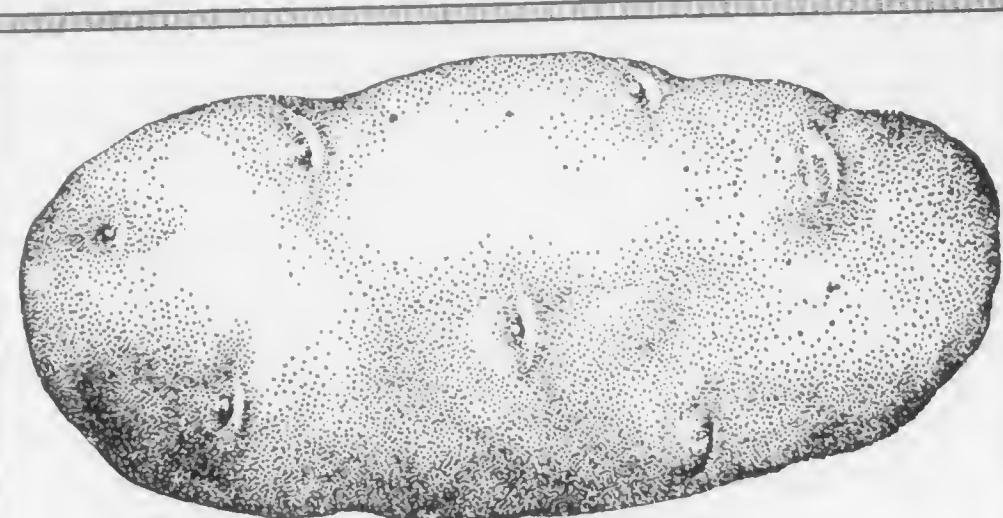
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ALLEN'S PLANTS

THE FERTILIZER SITUATION

By Dr. J. P. Stewart

This is usually about the best time of year to place one's contracts for the season's requirements in fertilizer. This may also be the case right now, especially if one is confining his purchases to the unmixed materials, rather than the commercial mixtures. In the mixtures, as usual, there seems to be a disposition to try to hold the prices up as high as possible on the plea of having contracted for their materials at higher prices than those now obtaining, and without regard to the so-called "replacement principle" which was so important in determining price quotations during the period of rising prices.

It will undoubtedly be of interest to know that official figures on importations show that the supply of potash now in sight is almost up to the quantity that came in in the last year preceding the war, when the price went down to less than eighty cents a unit in carload lots. We may hardly expect to buy it as low as that this year, although even this is possible, but at least no intelligent farmer should be expected to pay the rate for potash that is being asked in the mixed-fertilizer quotations for next spring use, viz.: \$2.50 per unit, plus profits and selling and manufacturing charges.

A similar situation also appears in the case of nitrogen or ammonia, which is likely to be of special importance to the fruit grower. The rates for ammonia in mixed fertiliz-

ers for the spring trade were based on a unit cost of \$5.25 plus the various charges and allowances for profits, whereas the actual average cost of ammonia on Nov. 15, was not over \$4 a unit of 20 pounds, and its cost has also been declining very rapidly since then. Practically every one should be vitally interested in this matter as the cost of fertilizers, in the face of a marked decline in the prices of farm products, may result in a serious reduction in acreage and yield per acre of the crops planted next year.

GUMMED PEACH TREES

A reader in New Jersey writes as follows:

"I have some nice young peach trees which have a tendency to form gum just under the soil on the bottom of the trunk. Sometimes I find little worms in the gum which means exit to the tree, put ashes around and applied hot water. I see some of them are gumming up again."

The gum is only the sign of the real trouble which is borers. Nature makes an effort to cover the wound by exuding the gummy substance. The little white worms sometimes found in the gum do no injury. The writer should hunt out the borers two or three times a year, using a sharp knife and a piece of annealed wire. After he is sure they have all been killed, earth them up in spring five or six inches high. This will prevent the laying of the eggs below the surface. The borers are then easily eradicated. Remove the dirt in the fall.

Peach Growing In South Jersey

MANY years ago Jersey peaches were famous in every large market and were unexcelled for their quality and flavor. Then came a period when from various causes the annual total production diminished rapidly until the state's claim for supremacy was soon rivaled by several other sections and finally was forced to acknowledge competition from such states as Georgia, California and Delaware. But today the tide has turned; the intrinsic worth of soils in many sections, the large markets nearby and last but not least the elimination of certain diseases and insects and the control of others thru scientific methods has resulted in a recovery that promises to place the state and especially South Jersey once again at the head of peach producing sections.

Leading Sections

A survey made by the State Department of Agriculture during the past summer shows the leading peach centers to be the Burlington County district; around Hammonton in Atlantic County; in the vicinity of Vineland in Cumberland County, and the Glassboro district in Gloucester County. Out of a total of 981,434 bearing and non-bearing trees in the State, these four districts have 692,194 trees of which 482,165 are bearing and 210,029 are not as yet producing. The Bridgeton area, with the immense orchards of the Seabrook Farms set since the survey was made, is growing rapidly and will soon compare in number of trees to these four main districts. Of the 692,000 trees now set in these districts over 512,000 trees are of the following six varieties which are placed in order of their popularity as indicated by the number of each: Elberta, Carmen,

Belle of Georgia, Greensboro, Hiley and Champion.

Farm Type

The farms in these districts are mostly specialized fruit farms of which truck crops not interfering with fruit production are also grown and which produce enough general crops for their own use. In some sections, such as the famous river-front district in Burlington County, many of the farms produce nothing but fruit and truck having to buy all the necessary feed for the stock as they believe the acreage ordinarily used for raising feed crops can be more profitably planted to such crops as sugar corn, sweet potatoes, tomatoes and other truck.

As an example of fruit farms of this type, attention is called to the results of a progressive grower in Cumberland County, who, regardless of his success does not seek publicity and when relating the story of the development of his farm requested that his name not be mentioned. This grower moved to Cumberland County in 1912 and located on a small farm of five acres with the idea of raising fruit and poultry. After a short experience with this combination type of farming he found it to be unsatisfactory for his purpose and decided to devote his efforts entirely to fruit growing.

In 1913 he purchased ten acres more and set it out in fruit, immediately following this by buying 3 acres more in 1914 and 35 acres in 1919, most of which has since been set to peaches. At the present time this grower has 2000 bearing peach trees from four to eight years old consisting of the following varieties: Belle of Georgia, J. H. Hale, Carmen, Elberta, Miss Lola, Early Elberta and

Hiley, and in addition 500 trees of the Elberta, Hiley, Slappey and Blackett varieties, which are two years old, and 600 trees of similar varieties set out last spring. Besides the peaches, ten acres are planted to apples, and generally about ten acres to sweet potatoes, and seven or eight acres to peppers, the last two crops often being grown between the young trees until they are of bearing age.

Certain Varieties Popular

On this farm the most popular varieties are the Belle of Georgia, Carmen, Elberta and Hiley. The J. H. Hale peach has not been as successful as was expected in spite of the fact that it produced almost twice as much peaches as the other varieties during the first bearing year. However, since that time it has not borne large crops and the owner is distinctly disappointed and claims he will never set any more of the variety. In justice to this peach it can be said that there are other sections which are strongly in favor of it which seems to indicate that it may be adapted to certain sections. Exclusive of this variety remarkable production has been obtained with an average yield the fourth summer of five to six baskets per tree and during the fifth summer of eight to nine baskets. In 1918, 3500 crates were obtained from 1000 trees and the crop that season brought \$2.25 per crate at the shipping station. The packing on this farm is usually done by an expert packer from one of the southern states who comes north after the packing season there has been completed. A packer of this type averages from 175 to 200 crates daily and has no difficulty handling alone an ordinary day's packing.

"Yellows" and "Little Peach" a Menace

The growing of peaches in these highly developed sections, however, is not accomplished without overcoming many serious problems. In the past years certain diseases such as "yellows," "little peach" and brown rot have been prevalent in these districts and have caused the growers much worry. Due to successful application of scientific principles these diseases have been kept under control in the main, but "yellows" and "little peach" are still a serious menace in all of the important peach sections and the necessity of absolute control to protect the peach industry is recognized by the State Horticultural Society which passed a resolution at its last annual convention recently held, calling for an appropriation of \$5000 by the next Legislature for the purpose of studying these diseases and making a fight against them.

The State Bureau of Markets is constantly emphasizing the necessity of uniform pack for the profitable marketing of peaches. In recent years the best growers have been developing standard grades when packing until today the Bureau of Markets believes that the time is ripe for a marketing law covering the packing of this important fruit. Not only some such system is established on the products of these extensive districts demand their proper value. However, with the planting of over 300,000 trees in the state within the last three years, an active fight against the enemies of this favorite fruit in preparation, and more progressive methods of grading and marketing the Jersey peach will soon come into its own.—L. G. Gilliam, Chief Land Registry, Trenton, N. J.

Protect Your Crop Investment Then Drive Ahead at Full Speed

"THINGS look pretty uncertain this year, John. What with taking chances with the weather, insects and fungus, I don't know where I am going to come out."

"That's one way to look at it Tom. But I am not taking any chances this year. And, believe me, I am not cutting my acreage of cash crops either."

"What are you driving at? You don't control the weather man, do you? What guarantee have you that you'll even get back the perfectly good money you're putting into seed, fertilizer and labor?"

"The best kind of a guarantee, Tom. A legally binding guarantee, signed by one of the strongest companies in America. I mean a Crop Investment Policy in the Home Insurance Company, New York."

John is right, a Home Crop Investment Policy takes the risk out of farming. It guarantees you against the loss of your investment in crop production through insect or fungus damage, drought, excessive moisture, flood, frost and winter kill.

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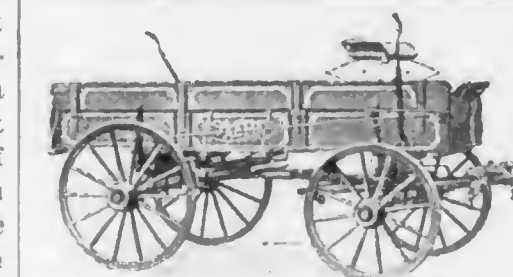
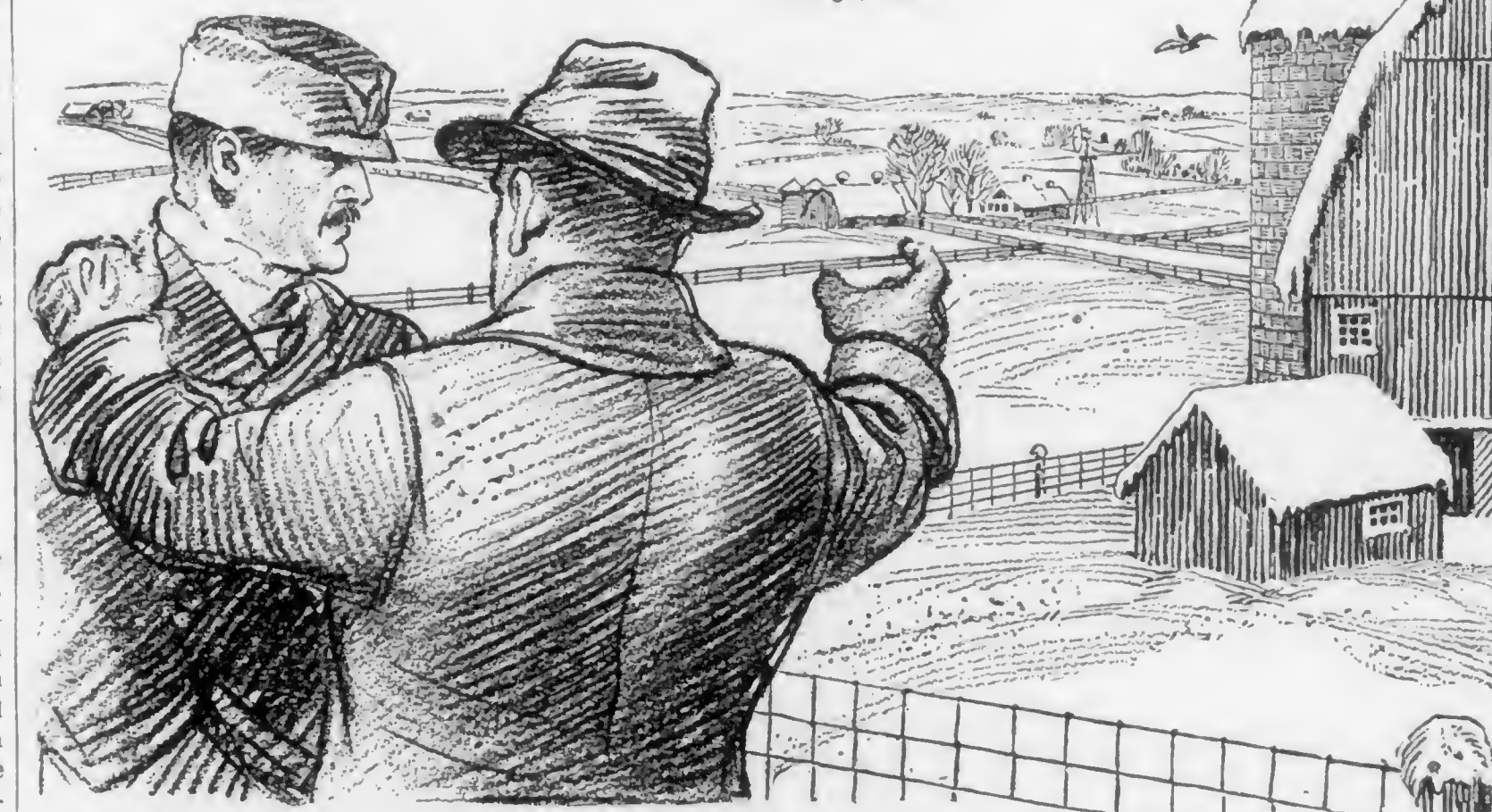
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Get thirty to forty percent more eggs from the same flock by feeding **SEMI-SOLID BUTTERMILK**. Numerous experiments absolutely prove that your egg yield may be increased by feeding this wonderful food and tonic for poultry.

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(A Tonic as well as a Feed)

Semi-Solid Buttermilk is a highly nutritive poultry feed and the best tonic and conditioner. Contains no injurious preservatives. Stays fresh indefinitely. It will keep your hens laying all winter. Be sure to get the genuine Semi-Solid Buttermilk.

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The answer lies in correct feeding. At the

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verized so that it blends well in the mash.

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KEEP PLENTY OF BREEDERS

The practice of penning the breed-

ers and making some selection each

spring in the eggs which are set is,

as everyone who has tried it knows,

one of the surest and cheapest ways

of improving the flock. These breed-

ing birds need not be closely penned,

in fact it is better to give them all

the range available and pen the birds

which are depended upon for mar-

ket eggs. We have followed this

practice for a number of years. The

first time we tried it we hired a man

to come to our place and pick out the

best yearling hens and the best

cock birds and these were mated to

produce hatching eggs. Since that

time we have done our own mating

and there is a marked improvement

not only in the laying habit in our

flock but in the looks of it. A good

many folks do not go much on looks

when it comes to chickens but be-

lieve me it pays if one intends to

sell eggs for hatching.

We made the mistake of using too

few hens the first season, partly be-

cause our yearling females were rather

limited as to number and next be-

cause we did not figure out in ad-

vance how many hens we needed to

produce our required number of

chicks. We just made a rough guess

at it and the results showed that we

guessed wrong. Like a lot of folks

do in counting chicks before they

are hatched we fell into the common

error of expecting too many from a

given number of hens. Since that

time we have figured out a rough

plan of mating breeding birds and

have not since been disappointed.

We base this estimate on and plan

for bringing off our chicks in two

hatches as we find the chicks ma-

ture more evenly and are easily car-

ried for and have the added advantage

of all coming into maturity at prac-

tically the same time. We expect to

have about three hundred pullets for

the laying house each fall so with

this as a basis we started to figure

back to find out how many breeders

we would need to produce this num-

ber of chicks in two hatches. Here

is the way we went about it:

Roughly speaking, half of the

chicks hatched each year will be

cockerels so we multiply 300 by two

which gives us 600 as the required

number of chicks. Next, we figure

that if our hatches average fifty per

cent we are doing very well—we

would like to make them do better

and sometimes they do—also some-

times they don't, so we figure on set-

ting twice as many eggs as we want

chicks. That makes a total of 1200

eggs to be set. Now if each hen

would lay one egg every day the

matter would be quite simple but we

have found that a 50 per cent egg

yield in February and March or in

March and early April, to be about

as good as we can expect on the aver-

age. On this basis counting sixty

days to the hatching season forty

hens would lay the 1200 eggs but

we cannot hold all of the eggs for it

is too long between hatches and the

hatching of the egg is very likely

to be impaired so we again dou-

ble the number and add 20 hens,

bringing the total up to 100 breed-

ers. We add these last 20 to ac-

count for the culs that will be

thrown out in the fall and for brood-

er losses.

Now, figuring on the basis of 100

hens at a 50 per cent egg yield for

60 days we get a total of 3000 eggs.

Half of these will hatch if all are

set. That leaves us 1500 chicks. Half

of these are going to be cockerels

which leaves 750 pullets. Allowing

for selection of hatching eggs and

brooder losses, culling and other

things then this 100 hens will pro-

duce in the neighborhood of 500 ex-

cellent pullets if all the eggs were

set in either February and March or

March and April and the person who

desires that many pullets should fig-

ure on at least 100 breeders and on

setting all of the desirable eggs.

Perhaps you can cut your brooder

loss some, or get a better hatch than

we get, but if you do you are a lit-

tle better than the average if your

success continues over a period of

years.

We have found that we need the

100 hens to get out 300 pullets for

the laying house in the fall, but as

I said we do not aim to hold eggs

very long, so we have a surplus which

are sold to others in the vicinity. If

anything happens, as it sometimes

does, we have something to fall back

on. Personally we would rather do

this than try to sell all of the eggs

laid, thus stretching our period of

chick rearing over a long time and

having an assortment of ages and

sizes in the fall. Besides, the re-

venue from the breeders, when we are

not saving eggs ourselves, is consid-

erable and pays for the extra trou-

ble of selection.—W. C. Smith.

POULTRY QUERY

Editor Pennsylvania Farmer:

We have had invariable good re-

sults from S. C. White Leghorn Pul-

lets, getting as high as 180 eggs per

hen for a flock average, until the

past two years. About April 1, 1918,

we hatched some chicks raising 35

excellent pullets which began laying

September 5th. In November and

December they were all molting and

we got almost no eggs until Febru-

ary. Last year, thinking the others

had been hatched too early, we hatched

some chicks May 1, from which we

raised 150 pullets and these we

separated in three pens of 50 each,

according as to development.

The pen of the best developed pul-

lets started laying last of September,

being hardly five months old, and by

the middle of November were laying

50 per cent or 25 eggs per day, since

then they have gradually dropped off

to about 20 per cent as about half

THE common way of eating popcorn is to pour melted butter over it and sprinkle on salt. But did you never eat freshly popped corn in rich milk, sweetened with a little sugar? It makes a delicious breakfast food or supper dish. Try some.

Always have a brisk fire for popping corn. To be the best, popcorn should begin to pop in 1½ to 2 minutes. Never put more corn in the popper than will just cover the bottom one kernel deep. And when preparing corn for the following recipes remove all unpopped kernels.

Crystalized Popcorn

Boil 1 cup sugar in one-third cup water until it spins a thread or until it reaches 230 degrees by the candy thermometer. Add 1 teaspoon vanilla flavor, and pour over 4 quarts popped corn, stirring it with a fork as you pour, and sprinkling on enough granulated sugar to coat the corn well. Spread out on sheets of waxed paper to dry. You might add a little red fruit coloring to the syrup sometimes to make the corn a delicate pink. And sometimes flavor the syrup with maple flavoring, or else use maple syrup or sugar to make a brown sweetening.

Seafarm Popcorn

Proceed as for the above recipe until the syrup is poured on the corn, then sprinkle with powdered sugar instead of granulated until the kernels separate. Lay out on the waxed paper at once to dry. Different colored syrups may also be used to make this if desired.

Popcorn Crisp

Put 1½ cups sugar, one-third cup corn syrup and one-third cup water into a kettle and stir until it begins to boil. Wash down the side of the kettle with your fingers dipped in cold water or use a wet cloth. Then cover the kettle and steam 3 minutes. Put in the thermometer and cook until the temperature reaches 230 degrees or until it will form a hard ball when a bit is rolled between the fingers in cold water. Now add one-third cup molasses, 2 tablespoons butter and a pinch of salt, and stir constantly until the syrup becomes very brittle when dropped in cold water. Remove at once from the fire and pour it over 4 quarts of popped corn, stirring constantly while pouring to make sure that all the corn is covered with the syrup. Spread the corn out on waxed paper so that it will not pack down, which it would do if left in the pan.

Popcorn Balls

Put 1 cup sugar, ½ cup corn syrup and one-third cup water into a kettle and stir until it begins to boil, then cook to 240 degrees, or until it will spin a heavy thread. Then add 1 teaspoon vanilla, and pour over the corn, stirring well as you pour. Now moisten your hands with cold water, and make the corn into balls of the desired size.

Maple sugar may be used instead of the white sugar. And for variety you can color the white syrup pink, and flavor as desired. Nut meats may also be added to the syrup before pouring. Thus added to the syrup they will be more evenly distributed thru the corn than if they are mixed with the corn before the syrup is poured on, because they will settle to the bottom while you are stirring if there is no "stickum" to hold them to the kernels.

Chocolate Popcorn Balls

Stir 1½ cups sugar, one-third cup

Of Interest to Farm Women and Girls

Seasonable Popcorn Recipes

corn syrup and ½ cup water over the hands to help with her part of the fire until the sugar is melted, then work? No, it never occurred to Jack wash down the side of the kettle with that Elizabeth needed extra help, and a damp cloth or with your fingers wet Elizabeth did not broach the subject, in cold water, cover the kettle and When the harvester refused longer let steam three minutes, then cook to do its work properly, Jack bought without stirring to the hard ball a new one. But Elizabeth still used stage (248 degrees), add one-third the tiresome up and down dash churn cup molasses and three tablespoons operated by Elizabeth's arm power, butter, and cook until when dropped though they really could afford to in cold water it becomes brittle. Re-have a modern churn run by an engine from the fire, add 3 squares of fine or even to install an electric chocolate shaved fine and 1 teaspoon power plant that would furnish light vanilla flavor, and stir thoroughly, and power, too.

Then pour onto 4 quarters of popped Elizabeth did not control any of



A Dishful of Seafoam Popcorn Makes a Delicious Confection

corn, stirring as you pour. Then with the income, not even the proceeds hands moistened in cold water press from the Rhode Island chickens lightly into balls. Have the corn which she cared for, hoping that she warm in a warm bowl you begin tonight use some of the money for

Crackerjack

Use the above syrup recipe, omit sionally. But Jack was so intent on bing the chocolate, and boiling until saving money to put into more land very brittle, then add 1 cup of pea that he did not take kindly to the nut meats to the syrup, and pouridea of Elizabeth's having a maga-



Pick Out All the Unpopped Kernels Before You Start to Make the Popcorn Balls

over the corn, stirring constantly. Spread out on wax paper to harden. —Mary A. Kintigh.

PARTNERSHIP OF ELIZABETH AND JACK

Elizabeth Roberts had for several years uncomplainingly washed, ironed, baked, cooked three meals a day, scrubbed, churned and sewed for her husband, Jack Roberts, and two hired men in summer. And during winter an additional two "hands" were hired much of the time. But did Elizabeth hire two extra pairs of

her request for the money, that he had spent it for some farm supplies. He said it did not matter where the money came from so long as it was for the benefit of the farm.

Elizabeth said nothing, but could hardly keep back the tears of astonished disappointment. But she sensibly began to think a way out. In the first place she reflected that Jack's ideas of a partnership were doubtless the result of family practices in his father's family before him as well as of her lack of assertion since they were married. And she came to the conclusion that it was up to her to see that no such ideas should be inoculated in the minds of their boys who were already showing signs of it. And so she tried to think out how she would show Jack that a husband and wife partnership is quite like a business partnership in that each partner must have similar access to the profits of the firm and that each should confer with the other as to the financial needs of their respective parts of the business.

Several days later Jack was in town again, when a man with whom he had previously talked about selling him some of the fine pigs that were ready to market called to see them. Elizabeth quickly decided to show him the pigs. Knowing that Jack had asked a certain price for the pigs, she set the price, and the man after looking them over counted out the money and loaded the pigs into his wagon and drove away. Elizabeth found herself with \$48 in her possession.

When Jack came home she told him that Mr. B— had taken the pigs. When he asked how much he paid for them, she told him, but did not offer to turn over to him any of the money. When he asked her for it, she replied that she had already planned to use it for things that the home needed. Jack looked at her in amazement. What did this mean? His meek little wife daring to affront him this way? He began to fume, but Elizabeth looked steadily at him, and when he finally was discomfited by her unusual and undaunted scrutiny, and stopped storming, Elizabeth quietly defined a partnership and reminded him that a life partnership was what they had agreed to when they married, and she was sure that he would not wish to fail in abiding by the usual customs of a partnership. Jack saw the point, and after that never sold the poultry that Elizabeth had reared and pocketed the money without her instructions, and neither did Elizabeth have to resort to selling the pigs that Jack raised to get money that she needed for personal or home supplies of her own choosing. They started keeping a common account, and neither bothered the other about small purchases that either wished to make, but neither made any sizable inroads on the family account without consulting the other.—Celia S. Rozelle, Lackawanna Co., Pa.

SALT HELPS AT BUTCHERING TIME

The following suggestion may be new to some. And just now it will be handy, for there is not a more common duty on most farms now than butchering. And the housewife's part in this work is no small one. We dread the cleaning up of the grease. Soap and water seem to lengthen the job instead of facilitating it.

When it came my turn to take up this part of the fall duties, I recoiled how we can cleanse a choco-

late cup with sugar, and I wondered if there was not something that would take up the lard in the same way. Sugar is too expensive for this service, so I tried salt, and found that it worked very successfully. I scarcely needed water after rubbing the outside of the utensils with a bag containing only a small amount of salt. And the inside may be cleaned without the cloth.

We must remember, however, that salt has a tendency to rust metal if allowed to stand on it.

Salt used thus to get the grease off the utensils seems to be as cheap as soap, and besides there is the saving in time and energy.

We find our paper very interesting, and well gotten up.—Mrs. M. V. F., Clearfield Co., Pa.

(Editor's Note.—Thank you for the appreciation of the service that we are trying to render to our readers. May we ask if you have ever tried using any of the various cleaning or scouring powders for cleaning up the butchering grease? We find that the best one of these powders take up the grease very readily, forming a sort of soap emulsion by combination of the grease with the alkali in the powder. These powders are put up in tin cans, with stamped holes in the top which can easily be punched thru with any sharp pointed instrument like an ice pick or an awl, and the powder is then readily sprinkled out as you need it. These cans cost five or ten cents each, according to the brand of the powder. Get them at your grocers. We think you will find them rather more satisfactory than salt and not very expensive.—Harriet Mason).

HOME BUREAU GROWTH IN NEW YORK

On Sept. 1 the membership had reached a total of 15,754. In 1918 the membership was only 1,677. Since Sept. 1, Herkimer County bureaus have been organized with a membership of over 500, and Lewis County has brought in over 400, while organization work is progressing in eight other new counties.

Two counties, Otsego and Jefferson, have passed the goal of 1000 members that was set as a maximum for 1920. The average membership per home bureau has been steadily raised from 209.62 in 1918 to 406.6 in 1919 and to 544.72 in 1920. The following table shows the status of the membership in each home bureau on Sept. 1:

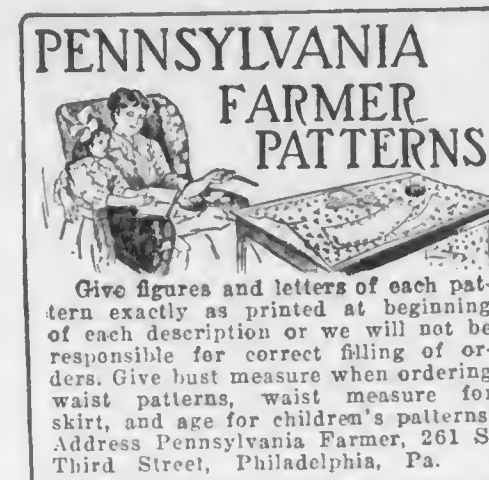
Allegany County, 269; Broome, 465; Cayuga, 486; Chemung, 441; Chenango, 721; Cortland, 620; Delaware, 436; Erie, 669; Jefferson, 1008; Monroe, 537; Nassau, 378; Niagara, 784; Oneida, 619; Otsego, 300; Orleans, 646; Oswego, 625; Saratoga, 387; Steuben, 290; Suffolk, 250; Sullivan, 490; Tioga, 574; Tompkins, 498; Ulster, 905; Wayne, 465; Westchester, 750. The two city home bureaus' membership is Buffalo, 450; Syracuse, 430.

HOMESPUN YARN

Tea, coffee and over much meat are taboo at the children's table.

Affording things is largely a matter of the way you look at it. The farm that can afford modern tools and equipment can afford running water in the house and a sewage system.

Those greens that you canned last spring taste mighty good now, don't they? How about a few more cans next season?



3404.—Good Apron Model.—It is cut in 4 sizes: Small, 32-34; medium, 36-38; large, 40-42, and extra large, 44-46 inches bust measure. A medium size will require 5 yards of 27-inch material. Figured percale, gingham, seersucker, sateen, alpaca, drill and cambric are suitable for this style. Pattern, 10 cents.



3414.—A Simple Apron With New Pocket Feature.—It is cut in 4 sizes: Small, medium, large and extra large. A medium size will require 3½ yards of 36-inch material. Gingham, linen, lawn, seersucker, drill, sateen and alpaca are attractive for this style. The pocket is stitched underneath the apron at the sides, and the flap buttons over it. The pocket may be placed over the apron if preferred. Pattern, 10 cents.

3373.—Spring Coat for Sister.—The pattern is cut in 3 sizes: 12, 14 and 16 years. A 14-year size will require 3½ yards of 42-inch material. Serge, cheviot, polo cloth, evora cloth, velours, tricotine, also pile fabrics, velvets, corduroy are suitable material. The collar may be worn high at the neck or rolled in reverse styles



as illustrated. Pattern, 10 cents. 3430.—Stylish Tailleur Costume.—The pattern is cut in 7 sizes: 34, 36, 38, 40, 42, 44 and 46 inches bust measure. A 38-inch size will require 4½ yards of 54-inch material. The width of the dress at lower edge is 1½ yard. Serge, broadcloth, tricotine, velours, velvets, satin, heathen mixtures and faile are attractive materials for this dress. Pattern, 10 cents.

If an income is to be of most use, a record must be kept of the way in which it is spent; with that knowledge one can tell whether it has been distributed wisely.

Possibly there are not enough vegetables in your family diet. The children should eat them, too.

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Consolidated Schools

THERE is no question of greater moment concerning the welfare of our boys and girls than that of consolidated schools. The impression seems to be quite general that an effort is soon to be made to close all schools having ten pupils, or less, and convey them to some central points, where two or more schools may be consolidated.

Dr. Thomas E. Finegan, State Superintendent of Public Schools, has recently made it known that he has no such thought in mind, and that under no circumstances will he advise such action unless the school authorities recommend it. He also states that he will not approve such action if it is to work hardships upon any great number of pupils.

Knowing his position, let us discuss the question, ever keeping in mind the thought that we would not ask for consolidation unless it is recommended by a majority of the school board and has the further approval of the State Superintendent.

Continuous Term

A proposition has been made that we adopt a divided school term of eleven months. The division of the school term is not new, as the state tried this plan for years and then discarded it as being impractical and detrimental to the best interest of the child. First a five months' term, with two months in summer and three in winter was tried, then the term was lengthened to seven months, holding three in summer and four in winter. The results obtained then as compared with those under the present system, prove conclusively that a continuous term gives better results than a divided one.

Buildings and Equipment

There are few, if any, one room school houses in Pennsylvania, that have been built ten years or more, that conform with the modern laws in heating, lighting and ventilation. Many of them are a disgrace to the community in which they are located as well as a menace to the health and progress of the children.

It would be much better to build one modern building at some central point, disregarding township lines, than to build eight or ten buildings and keep them in repair. It is impossible to equip a one room school building with the apparatus needed in teaching the subjects demanded today. A modern building could be suitably equipped and the same equipment used by all of the children in the district.

Trained Teachers

One of the greatest objections to the one room school is that the school board is forced to constantly change teachers. It is a rare thing for a teacher to teach in a rural school two years in succession. If she is especially successful during her first year she usually has no trouble in securing a position in a town or city school the next at higher wages and for a longer term. Our rural schools have for years been used as training camps to prepare teachers for grade and high school work and "genius goes where the money flows." This condition can best be remedied by consolidating our schools and by electing trained teachers for a term of years, or as long as their work is satisfactory.

The suggestion that we employ teachers for eleven months, requiring them to teach primary and grade work in the one-room schools during

the summer, and then close these schools and enter the high school and teach home economics, manual training and agriculture, is too absurd to give even a passing thought. It simply cannot be done successfully. The work of the primary teacher differs widely from that of the teacher in the high school, while that in the Department of Home Economics, Manual Training and Agriculture, is separate and apart from either, requiring recognized talent and special training on the part of the teacher. It would be just as practical to ask a teacher in music to teach physics, as to ask a primary teacher to teach agriculture or manual training. No teacher has yet been found who could teach all subjects successfully. We are living in an age of specialists; one in which our boys and girls are being asked to specialize and learn to do at least one thing well. This can be done by giving them trained teachers throughout their school life.

Benefits Received by Pupils

The benefits received by pupils who have the advantage of training obtained in a first-class high school are so great that they completely overshadow the hardships encountered.

Personal contact and association have a wonderful influence in shaping the destinies of our boys and girls. It is as true of the little folks as it is of those older grown. Watch them at play in the kindergarten and you cannot help but be impressed with the spirit of rivalry and competition that is manifested at their age. The man who said "Give me the boy until he is eight years of age and I care not who has after that," understood that "The twig is bent the tree is inclined."

No hardship is too great that can be financially or physically overcome, when we consider the benefits received by the boys and girls who are brought to one central plant and given in charge of a good teacher.

Pupils who have the advantage of a first-class high school complete their school work from two to six years sooner than under the old method. During this time they remain at home and have the advantage of home influences excepting two years at normal school or four years at college.

A graduate from a first-class high school may enter the junior year in any of our normal schools and complete the course in two years, or may enter college without further examination. If graduates from one of our vocational schools, or a high school having vocational courses, they may enter State College and complete their work and get their degree in two years. Forty-two vocations in life, or a means of earning an honest and competent living, are immediately opened to the boy and girl with a high school diploma. Shall we then blind prejudice or bitter jealousy deny our boys and girls these benefits? We think not. To one who has watched the growth and development of the high school system, and helped in a small way to establish it, it is hard to conceive how any one could oppose it.

Schools are established and maintained for the benefit of the children, not for the taxpayer, nor to give teachers a job. The aim of all schools should be to train one for complete living and the modern school building is the answer to the problem.—E. B. Dorsett.

MIXING FERTILIZERS AT HOME

(Continued from Page 3).
The commercial mixed would convert this amount of nitrogen into ammonia and call it 4.4 per cent. To obtain 8 per cent phosphoric acid from acid phosphate, 16 per cent goods it requires 1000 pounds, because we want 160 pounds to get our required analysis. Muriate of potash is practically 50 per cent actual potash. We want 120 lbs. actual potash to make a 6 per cent analysis, hence if muriate of potash is 50 per cent actual potash we must have 240 lbs. of muriate. Now, when we add these ingredients we find, if we have used blood, we have 1840 lbs.; if we use fish instead of blood we have 1900 lbs. "Oh! we have not a ton," some one says. But why care, we have all the pounds of plant food and some to spare. Those pounds of plant food are all that are of any value to the farmer or his crops; but if you feel you must have a ton in weight, put in anything you have handy, until it weighs a ton.

Any formula desired can be made and mixed the same as the one here worked out in detail. First, determine what analysis you desire, then multiply that by 20 to give the number of pounds contained in the ton; next determine how many pounds of whatever ingredient you are using, it will require to give you that many pounds. For example, if we want to make a 3-8-3 mixture and derive our nitrogen content from two sources equal, using nitrate of soda for one, and say 12 per cent blood for the other, we will use 200 lbs. soda, analyzing 15 per cent or more which will give us 30 lbs.; next use 250 lbs. blood which will give us 30 lbs. more total 60 lbs., the required amount for a 3 per cent mixture. Next, for an 8 per cent phosphoric acid content we must have 160 lbs. If 16 per cent acid phosphate is used, it will require 1000 lbs. For a 3 per cent potash content, it takes 60 lbs. and muriate of potash being 50 per cent actual potash it will require 120 lbs. Now we have a high grade, 3-8-3 fertilizer, because all the ingredients used in its making are high grade but we have only 1570 lbs. for a ton this can be used just as it is, applying it thin; or some filler can be mixed with it till it weighs the ton. This fertilizer will cost for the materials used, \$30.60.

Mixing.—When ready to mix, have your formula figured out so you will know how much of each material you will need. Acid phosphate being the greatest bulk. I use half of what I need laid down first; next use your blood or fish or tankage whichever one you have decided upon, level off evenly, now build up one layer on top of the other evenly distributed. Now commence on one side of the pile and mix with an ordinary garden hoe. Hoe it over two or three times mixing it as you would concrete. When it is all of a uniform color it will do. Now screen it, I use a screen home made of 3/8-inch mesh wire set on legs at an angle of about 45 degrees. Shovel your mixture on this screen and mash all lumps that do not go thru. Now if room will permit, leave this in a pile three or four days before bagging. This will prevent any baking.

What does it cost to mix fertilizers at home? Why it costs me nothing. I have regular men after March 1 that must be paid rain or shine. When a bad day comes and outdoor work is out of the question, I put them to mixing fertilizer.—C. C. Hulsart, New Jersey.

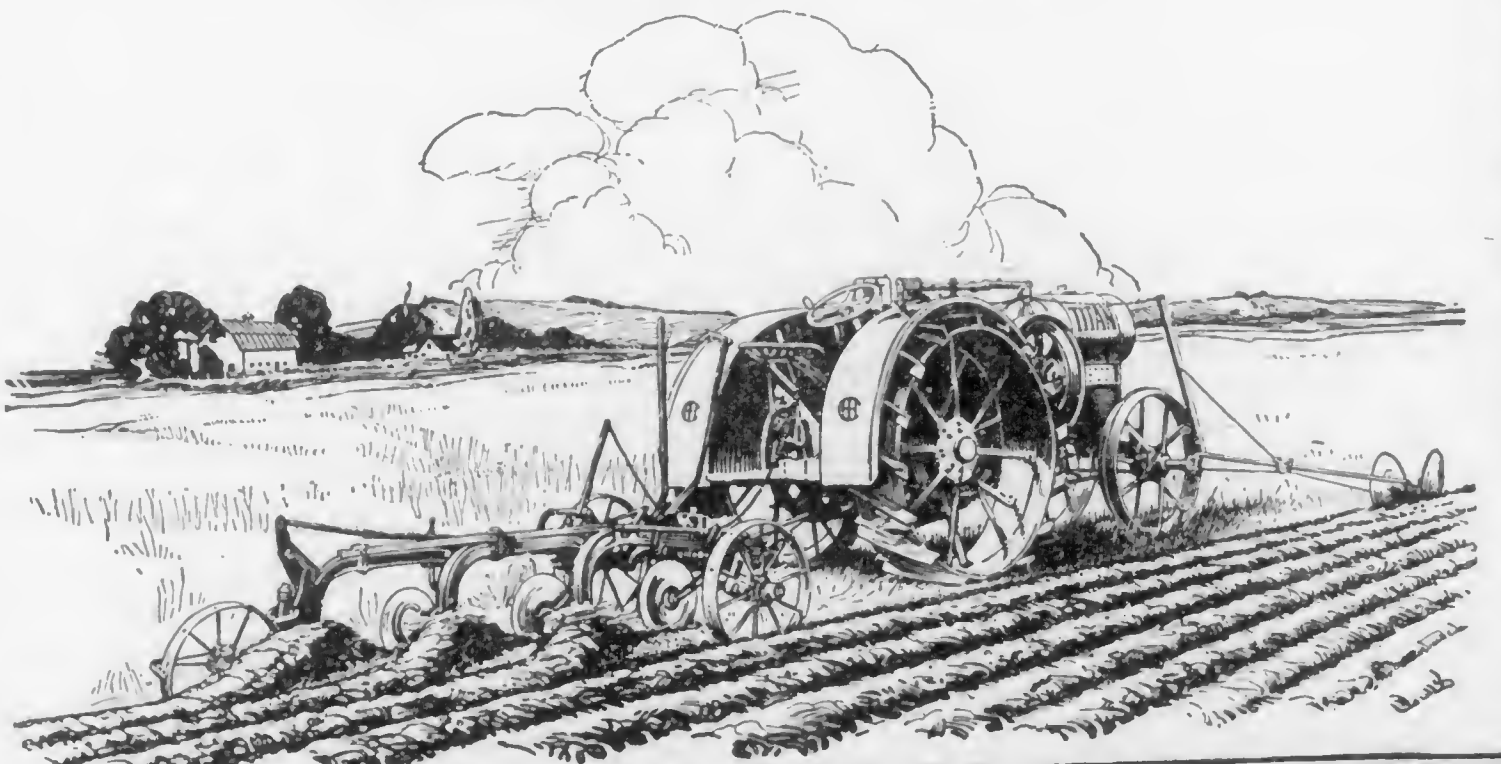
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TALKS WITH THE BOYS

THE EDITOR'S LETTER

To the Boys:

It will not be necessary for me to take up much of our space this week because we have some letters from the real boys.

The first one to come in is a splendid article from Master "Dick" Richardson, of Bucks County, who knows a lot about birds. I hope that other boys will take the cue from this article and begin the study of bird life about their homes. His suggestions about feeding birds in winter is a good one and it will draw them about so that you will have a chance to see and know them. Let us hope that Dick will write more and tell us what kind of houses to prepare for them. It would be interesting to have some pictures to illustrate the ideas.

One boy from Dauphin County, Pa., writes to tell of his interest in the department and of the work he can do on the farm. I am sure he will make a crackerjack farmer. He says he would like to raise a big fat hog but does not know how to go about it and would like us to tell him. A man one time wrote a recipe for making rabbit broth and began it by saying, "First, catch the rabbit," and then went on to tell how to make the soup. So, to this boy we would say: first, get a little pig. That will be up to him, but I am sure a good, five farm boy will soon solve that problem. Then we want some of the Pig Club members to tell us just how they raise their pigs.

A letter from a grown-up this morning contains the following as a P. S.:

"Your department for the boys is great but you can put up all the notices you want to about it being for the Boys and the Editor exclusively, you cannot keep us 'older boys' from reading that page. So there!" That is good. I hope the "older boys" will read it because I should not wonder if they will occasionally find something in it they should know—especially the men who never were boys, or have forgotten that they were.

Now that is all the space I will take this time. The thing is going on with a bang. I have always found that you could depend upon farm boys to come up to the scratch.

Smiley The Editor

P. S.: You will note that the writer of one of the letters on this page says that his sisters think the girls should have a department also. Well, they are right, and just as soon as we can get to it they shall have it. I don't believe in treating either one better than the other in the home and that principle should hold in a paper as well.

LIKES TO TRAP

Dear Editor—I am glad that the Pennsylvania Farmer is going to have a space for the boys and the Editor. How nice it will be and I wish our page much success.

My sisters say they can't see why all our farm papers must publish a page for boys. They think girls are more important but we don't think so do we? Anyway, I'm glad you are going to give us a place in your paper.

I am a genuine farmer boy of 13

I live on an \$6-acre farm. I love school and my teacher. I am in the seventh grade. I have a mile to walk to school every morning and evening except rainy days I am taken to and from school. I have eight books.

I love to trap and love nearly all out-of-doors work. But trapping does not pay very well this year. I had traps set two nights and caught a skunk. It was a large one and nearly black—had two white stripes over its head. Last year one like that brought about \$5. I caught this one late in December, 1920, and sold it for \$1.50.

Well, don't you think I have said enough on my first visit? I hope some more of our farm boys will write. It will help to make our page more interesting.

With my best wishes for your happiness, health and wealth in the New Year.—Simon R. Snyder, Lancaster Co., Pa.

SOME WINTER VISITORS AND HOW TO KNOW THEM

Of the various birds that may be seen at one time or another in Pennsylvania the winter visitors are very interesting for the reason that they are easier to make friends with and study than some others. This is largely because of the scarcity of the food they eat. For, if one takes time and trouble to put out food and shelter for the birds in winter when the weather is bad, and when the "high cost of living" is carrying things with a high hand in Birdland, he will surely be repaid for his labors.

Hemp, sunflower and millet seeds are well liked by many birds. Suet is also a favorite food and should be a large part of the provisions of a birds' "free lunch counter." This suet may be fastened on trees very nicely by nailing inch mesh wire netting over it. The birds will then eat thru the netting and one bird cannot fly off with the whole piece of suet at once.

The chickadee, a little, gray, black-capped fellow, will probably be one of the first visitors to the suet lumps. He is one of the tamest of our birds and it is quite easy to get acquainted with him.

Another common winter visitor is the tufted titmouse. This little fellow is bluish gray above and white underneath, with chestnut streaks on his sides and a little crest on his head. He also is quite tame and will soon come to get food. He and the chickadee are very amusing while eating suet that is fastened on the end of a branch. They will hang in almost any position during the meal, often hanging head downward.

The white breasted nuthatch is as much of an acrobat as these, for he always faces the way he is going on the trunk of a tree, whether it be up or down. Unlike the chickadee and titmouse, he is more a creature of the tree-trunks than the branches.

A common bird that is nearly always with us, both winter and summer, is the downy woodpecker, and his cousin, the hairy woodpecker, who is three inches longer, may often be seen all the year round in the country, creeping up and down the tree trunks in search of bugs. Although he is very fond of these bugs, Mr. Downy is also fond of suet and it will not be long after the placing

of it before he will be displacing it to his own satisfaction.

One of the prettiest of the few of our feathered friends which visit us in this coldest season of the year is the white-throated sparrow. He is very sparrow-like in his general coloring but he has a white throat and a richer more reddish brown on his body than the more common varieties. In winter you often see him hopping about on the leaves scratching for food. He is fond of seeds and will probably come to eat the hemp, sunflower, millet and other seeds that are put out for him. His cousin, the song sparrow, is occasionally with us in both summer and winter, though he likes Pennsylvania better in summer. A food that is well liked by song sparrows on a cold day is a mixture of rolled oats and suet. This may be spread on a board which is placed within easy reach of the birds.

The slate-colored junco is, as his name suggests, slate-colored on his back and wings and around his neck. His distinctive mark is the pair of white outer tail feathers which show up very well when he flies.

You may be sure that these winter friends will more than repay in many ways all kindness done to them.—Russell Richardson, Jr., Bucks Co., Pa.

BOYS AT THE STATE SHOW

The boys from the farms of Pennsylvania will play an important part in the fifth annual State Farm Products Show, to be held in Harrisburg, January 25-28. One hundred and thirty boys, representing every section of the state, will be guests of the Pennsylvania Department of Agriculture and the Y. M. C. A. during the show, and while here will take part in the annual corn judging contest, which is one of the features of the show.

Each agricultural vocational school in the state will send a team of two boys. There are 37 of these schools, while one team will represent each of the 16 high school agricultural departments. In addition, one team will be sent by each county supervisor of agriculture, making thirteen of these teams.

There will be a vocational school exhibit as a part of the show, and this will illustrate the work that is being carried on in the vocational schools scattered thruout Pennsylvania, where agriculture is taught.

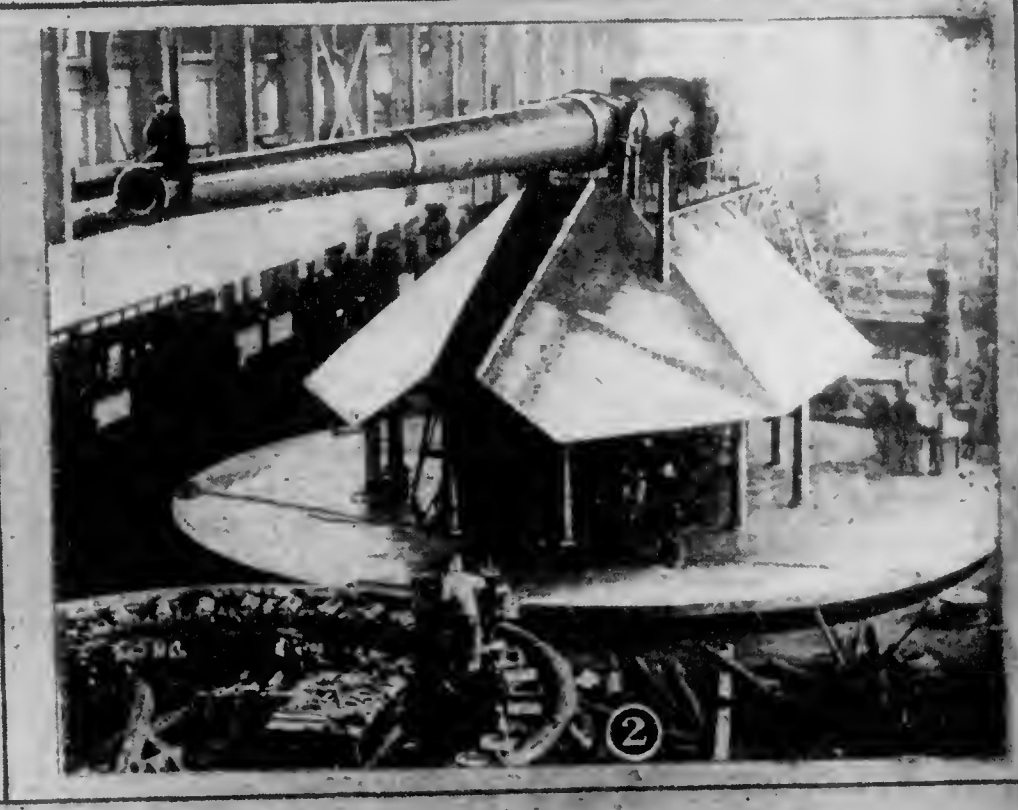
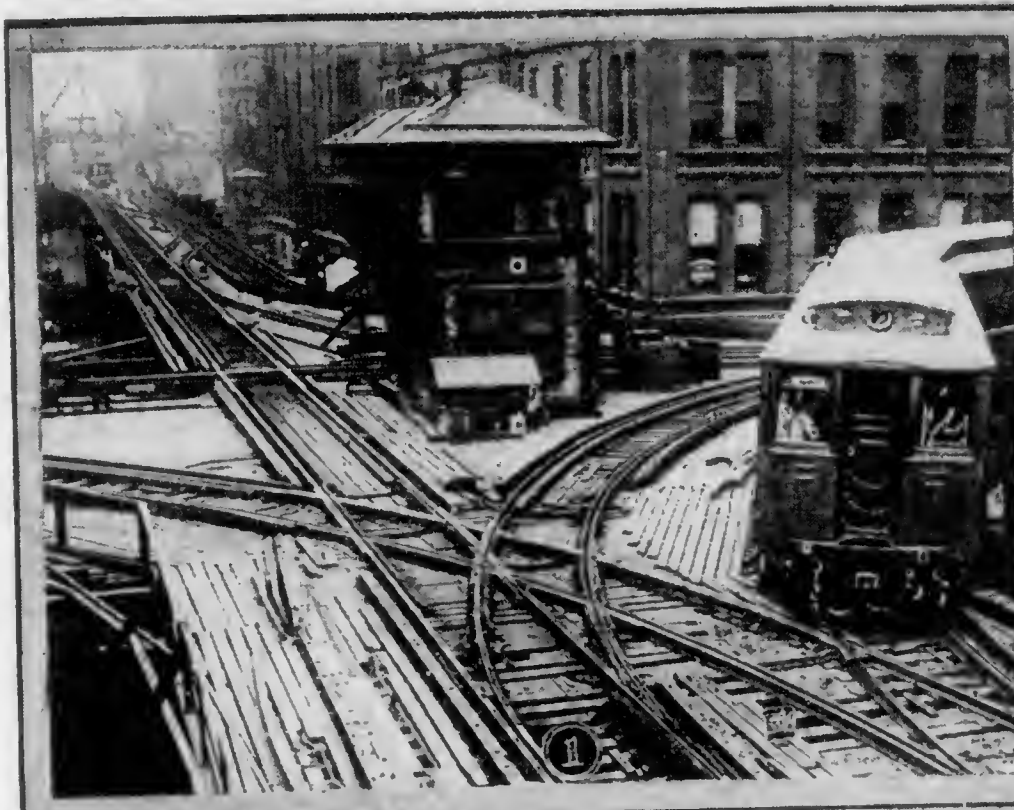
The boys who come to the show from each school are selected on account of their ability displayed in corn judging and the trip to Harrisburg is in recognition of their meritorious work during the year.

The boys will arrive Tuesday morning, January 25, and will be quartered at the Y. M. C. A. The Pennsylvania Department of Public Instruction will have competent agricultural teachers in charge of the boys during their entire visit at the show.

Each morning they will be awakened at 6 o'clock, have breakfast at 7 and then follow the day's program, which includes visiting the Legislature, meeting Governor William S. Sprunt, Secretary of Agriculture Fred Rasmussen, and other state officials. They will visit the various departments of the State Farm Products Show and in the evenings, entertainment will be provided.

On Wednesday morning, Jan. 26, the annual corn judging contest will be held and the large silk banner will be awarded to the school represented by the winning team. Three individual prizes will also be awarded.

PASSING EVENTS IN PICTURES



1—The busiest Railroad Crossing in the World is that of the Chicago Elevated Railways at Lake and Well Streets.

2—Great New 16-inch Gun that can Hurl Shell Weighing 2700 pounds, 35 Miles.

3—Governor and Mrs. Coolidge, also Senator Lodge at Plymouth Rock, Plymouth, Mass.

4—East Side, New York, Kiddies are Happy with Soldier-made Toys given by Knights of Columbus.

5—Skating is more Popular this Season than for Many Years.

6—New York Wars on Bandits; Police Officer with Newly Adopted sub-machine Gun.

7—Two years ago, little Leo was left an orphan, and this motherly Collie adopted him. He seems to have brought the lion up right, because Leo still respects his stepmother, although he is a full grown lion.

8—Miss Hope Hampton, Movie Actress, in her \$100,000 sable coat.



SYNOPSIS

Dan Tailing had just received from his physician the unwelcome information that he had but six months to live. Altho descended from a long line of hardy pioneers, his life had been spent in the city where refinement is an office had destroyed the physical foundation which his forebears had laid. He strolled out to the city park, seated himself on a bench where he made the acquaintance of a squirrel. The squirrel's antics awoke a latent love and a preoccupation for the things of Nature and he suddenly resolved to spend his last six months in the forests of the Northwest where his grandfather had lived. He sets at once upon this resolve and he is soon in the virgin forests of that great country. He is fortunate in becoming acquainted with a home owned by a man who knew and loved Dan's grandfather. A dancer, nicknamed Snowbird, is also a member of the family.

(Continued From Last Week)

CHAPTER II

As all real woodsmen know, there is no other object in the material world that glints exactly like a gun barrel in the light. It has a look all its own. It is even more distinctive in the sunlight, and now and again men have owed their lives to a momentary glitter across a half-mile of forest. Of course, the ordinary, peaceful, God-fearing man, walking down a trail at night, likely would not have given the gleam more than an instant's thought, a momentary breathlessness in which the throat closes and the muscles set; and it is more than probable that the sleeping senses would not have interpreted it at all. But Hildreth was looking for trouble. He had dreaded this long walk to the settlements more than any experience of his life. He didn't know why the letter he had written, asking for an armed escort down to the courts, had not brought results. But it was wholly possible that Cranston would have answered this question for him. This same letter had fallen into a certain soiled, deadly pair of hands which was the last place in the world that Hildreth would have chosen, and it had been all the evidence that was needed, at the meeting of the ring the night before, to adjudge Hildreth a merciless and immediate end. Hildreth would have preferred to wait in the hills and possibly to write another letter, but a chill that kept growing at his finger tips forbade it. And all these things combined to stretch his nerves almost to the breaking point as he stole along the moonlit trail under the pines.

A moment before the rush and whirl of the grouse flock had dried the roof of his mouth with terror. The tall trees appalled him, the shadows fell upon his spirit. And when he heard this final sound, when he saw the glint that might so easily have been a gun-barrel, his nerves and muscles reacted at once. Not even a fraction of a second intervened. His gun flashed up, just as a small-game shooter hurls his weapon when a mallard glints above the decoys, and a little, angry cylinder of flame, darted, as a snake's head darts, from the muzzle.

Hildreth didn't take aim. There wasn't time. The report roared in the darkness; the bullet sang harm-

The Voice of the Pack

by Edison Marshall

lessly and thudded into the earth; and both of them were the last things in the world that Cranston had expected. And they were not a moment too soon. Even at that instant, his finger was closing down upon the trigger, Hildreth standing clear and revealed thru the sights. The nervous response that few men in the world would be self-disciplined enough to prevent occurred at the same instant that he pressed the trigger. His own fire answered, so near to the other that both of them sounded as one report.

Most hunters can usually tell, even if they cannot see their game fall, whether they have hit or missed. This was one of the few times in his life that Cranston could not have told. He knew that as his finger pressed he had held as accurate a "head" as at any time in his life. He did not know till another circumstance—that in the moonlight he had over-estimated the distance to the clearing, and instead of one hundred yards it was scarcely fifty. He had held rather high. And he looked up, unknowing whether he had succeeded or whether he was face to face with the prospect of a duel to the death in the darkness.

And all he saw was Hildreth, rocking back and forth in the moonlight—a strange picture that he was never entirely to forget. It was a motion that no man could pretend. And he knew he had not missed.

He waited till he saw the form of his enemy rock down, face half-buried in the pine needles. It never even occurred to him to approach to see if he had made a clean kill. He had held on the breast and he had a world of confidence in the great, shocking, big-game rifle. Besides, the rifle fire might attract some hunter in the hills, and there would be time in the morning to return to the body and make certain little investigations that he had in mind. And running back down the trail, he missed the sight of Hildreth dragging his wounded body, like an injured hart, into the shelter of the thickets.

CHAPTER III

Whisperfoot, that great coward, came out of his brush-covert when the moon rose. It was not his usual rising time. Ordinarily he found his best hunting in the eerie light of the twilight hour; but for certain reasons, his knowledge of which would be extremely difficult to explain, he let this time go by in slumber. The general verdict of mankind has decreed that animals cannot reason. Therefore it is somewhat awkward to explain how Whisperfoot knew that he needn't be in a hurry, that the moon would soon be up, and the deer would be feeding in their light. But know all these things he did, act upon them he also did, and it all came to the same end. Whether or not he could reason didn't affect the fact that a certain chipmunk, standing at the threshold of his house to glimpse the moonlit forest, saw him come slipping like a cloud of brown smoke from his lair a full hour after the little creature had

every right to think he had gone to his hunting—and straightaway tumbled back into his house with a near attack of heart failure.

But the truth was that the chipmunk was presuming upon his own desirability as food. His fear really wasn't justified. It would not be altogether true to say that Whisperfoot never ate chipmunks. Sometimes in winter, and sometimes in the dawn after an unsuccessful hunt, he ate things a great deal smaller and many times more disagreeable than chipmunks. But the great cat is always very proud when he first leaves his lair. He won't look at anything smaller than a horned buck. He is a great deal like a human hunter who would kill two deer a week for fifty-two weeks would be called a much uglier name than poacher; but yet this had been Whisperfoot's record, on and off, ever since his second year. Many a great buck wore the scar of the full stroke—after which Whisperfoot had lost his hold. Many a fawn had crouched panting with terror in the thickets at just a tawny light on the gnarled limb of a pine. Many a doe would grow great-eyed and terrified at just strange, pungent smell on the wind.

Whisperfoot had slept almost since dawn. It is a significant quality in the felines that they simply cannot keep in condition without hours and hours of sleep. It is true that they are highly nervous creatures, sensualists of the worst, and living intensely from twilight to dawn; and they burn up more nervous energy in a night than Urson, the porcupine, does in a year. In this matter of sleeping, they are in a direct contrast to the wolves, who seemingly never sleep at all, unless it is with one eye open, and in still greater contrast to the king of all beasts, the elephant, who is said to slumber less per night than that great electrical wizard whom all men know and praise.

The great cat came out yawning, as graceful a thing as treads upon the earth. He was almost nine feet long from the tip of his nose to the end of his tail, and he weighed as much as many a full-grown man. And he fairly rippled when he walked, seemingly without effort, almost without resting his cushions on the ground. He stood and yawned insolently, for all the forest world to see. He rather hoped that the chipmunk, staring with beady eyes from his doorway, did see him. He would just as soon that Wolf's little son, the bear cub, should see him too. But he wasn't so particular about Wolf himself, or the wolf pack whose song had just awakened him. And above all things, he wanted to keep out of the sight of men.

For when all things are said and done, there were few bigger cowards in the whole wilderness world than Whisperfoot. A good many people think that Graycoat the coyote could take lessons from him in this respect. But others, knowing how a hunter is brought in occasionally with almost all human resemblance gone from him because a cougar charged in his death agony, think this is unfair to the larger animal. And it is true that a full-grown cougar will sometimes attack horned cattle, something that no American animal cares to do unless he wants a good fight on his paws and of which the very thought would throw Graycoat into spasms; and there have been even stranger stories if one could quite believe them. A certain measure of respect must be extended to any animal that will hunt the great elk, for to miss the stroke and get caught beneath the churning, lashing, slashing, razor-edged front hoofs is simply death, painful and without delay. But the difficulty lies in the fact that these things are not done in the ordinary, rational blood of hunting. What an animal does in its death agony, or to protect its young, what great game it follows in the starving times of winter, can be put to neither its debit nor its credit. A coyote will charge

when cornered. A hen will peck at the hand that robs her nest. When hunting was fairly good, Whisperfoot avoided the elk and steer almost as punctiliously as he avoided men, which is saying very much indeed; and any kind of terrier could usually drive him straight up a tree.

But he did like to pretend to be very great and terrible among the smaller creatures. And he was Fear itself to the deer. A human hunter who would kill two deer a week for fifty-two weeks would be called a much uglier name than poacher; but yet this had been Whisperfoot's record, on and off, ever since his second year. Many a great buck wore the scar of the full stroke—after which Whisperfoot had lost his hold. Many a fawn had crouched panting with terror in the thickets at just a tawny light on the gnarled limb of a pine. Many a doe would grow great-eyed and terrified at just strange, pungent smell on the wind.

He yawned again, and his fangs looked white and abnormally large in the moonlight. His great, green eyes were still clouded and languorous from sleep. Then he began to steal up the ridge towards his hunting grounds. Dry as the thickets were, still he seemed to traverse them with almost absolute silence. It was a curious thing that he walked straight in the face of the soft wind that came down from the snow fields, and yet there wasn't a weathercock to be seen anywhere. And neither had the chipmunk seen him wet a paw and hold it up, after the approved fashion of holding up a finger. He had a better way of knowing—a chill at the end of his whiskers.

In fact, the other forest creatures did not see him at all. He took very great precautions that they shouldn't. Whisperfoot was not a long-distance runner, and his whole success depended on a surprise attack, either by stalking or from ambush. In this he is different from his fellow cowards, the wolves. Whisperfoot catches his meat fresh, before terror has time to steal out of the heart and poison it; and thus, he tells his cubs, he is a higher creature than the wolves. He kept to the deepest shadow, sometimes the long, strange profile of a pine, sometimes just the thickets of buckbrush.

And by now, he no longer cared to yawn. He was wide awake. The sleep had gone out of his eyes and left them swimming in a curious, blue-green fire. And the hunting madness was getting to him; that wild, exultant fever that comes fresh to all the hunting creatures as soon as the night comes down.

The little, breathless night sounds in the brush around him seemed to madden him. They made a song to him, a strange, wild melody that even such frontiersmen as Dan and Lennox could not experience. A thousand smells brushed down to him on the wind, more potent than any wine or lust. He began to tremble all over with rapture and excitement. But unlike Cranston's trembling, no wilderness ear was keen enough to hear the leaves rustling beneath him.

His excitement did not affect his hunting skill at all. In fact, he couldn't succeed without it. A human hunter with the same excitement and fever, would have been rendered impotent long since. His aim would be shattered, he would make false steps to frighten the game, and not even Urson, the porcupine, would really have cause to fear him. The reason is rather simple. Man has lived a civilized existence for so long that many of the traits that make him a successful hunter have to be

A Story for Children

The Story of the Clock

"COME, BETTY," said Mother, "put away your dolls. It is time for bed."

"Oh, mamma," pleaded Betty, "I don't want to go to bed yet. I'm not a bit sleepy."

"But, Betty, look at the clock. The hands are pointing to 7 and you know that is bedtime."

"Horrid old clocks! I wish they'd all stop and never go again," muttered Betty as she tucked Matilda and Josephine into the carriage in which they slept.

"Tick-tock, tick-tock," sounded the dining room clock in the night, and in the quietness its voice seemed to grow louder and louder.

"What's the matter?" inquired the kitchen clock from its shelf. "You seem to be angry."

"Didn't you hear what Betty said before she went to bed? I think I'll stop and see how she likes it."

"Well, if you stop, I'll stop," answered the kitchen clock.

The tall grandfather's clock in the hall paused to listen to the conversation. "If they are both going to stop, I'll stop too. I am quite tired ticking day and night and would like a rest."

Betty opened her eyes. How quiet the house was! But it was quite light and must be time to get up. She slipped into mother's room. Mother was wide awake, but still in bed. Isn't it time to get up?" asked Betty. "I don't know, dear; the clocks have all stopped."

Betty dressed and ran downstairs, from a covert from which Bert Cranston had poached her—and he felt the lie in one bound.

Terrified though he was by the rifle shot, still Whisperfoot sprang. But the distance was too far. His outstretched paw hummed down four feet behind Blacktail's flank. Then forgetting everything but his anger and disappointment, the great cougar opened his mouth and howled.

Howling, the forest people knew, never helped one living thing. Of course this means such howls as Whisperfoot uttered now, not that deliberate long singsong by which certain of the beasts of prey will sometimes throw a herd of game into a panic and cause them to run into an ambush. All Whisperfoot's howl of anger achieved was to frighten all the deer out of his territory and render it extremely unlikely that he would have another chance at them that night. Even Dan and Lennox, too far distant to hear the shots, heard the howl very plainly, and both of them rejoiced that he had missed.

(Continued Next Week).

HE LOST COUNT

A certain instructor in mathematics is, like many other professors, of a very absent-minded turn. The father of half a dozen children, he is often oblivious of his domestic treasures. On Sunday morning, he was returning from divine service with his wife, when a youngster rushed up to him exclaiming: "Genevieve's tumbled into the canal!"

A worried look came to the professor's countenance. Turning to his wife, he said: "Have we a Genevieve, my dear?"

No breakfast ready. "You see I didn't know what time it was. All the clocks have stopped," explained Hannah.

When Betty had finished her breakfast she put on her hat and ran down the street to call for her little chum, Pearl, to go to kindergarten. "Why, Betty, you are very late," said Pearl's mother. "Pearl has been gone some time."

Betty hurried down the street. Not a child in sight. No one on the playground. She crept up under the window and listened, then turned and ran home, the tears trickling down her cheeks.

"I'm sorry, little daughter," said Mother, "but I had no way of telling the time."

"Do you think it's anywhere near 1 o'clock?" asked Betty a few hours later. "You know, Uncle James promised me a ride if I came at 1."

"You'd better run over and see," said mother.

But alas for poor Betty! She ran around the corner just in time to see Uncle James disappear in the distance.

"Betty, Betty, wake up!" and Betty opened her eyes to find Mother standing by her bedside.

She sat up and listened intently, then threw her arms around Mother's neck, exclaiming, "Oh, I'm so glad it was only a dream!"

And before she ate her breakfast Betty crept over to the clock and whispered: "I'm sorry I called you names. I'll never do it again."

EVERY INCH A MAN

She sat on the porch in the sunshine As I went down the street— A woman whose hair was silver, But whose face was blossoms sweet, Making me think of a garden, Where, in spite of the frost and snow Or bleak November weather, Late, fragrant lilies grow.

I heard a footstep behind me, And the sound of a merry laugh, And I knew that the heart that it came from

Would be like a comforting staff In the time and hour of trouble, Hopeful and brave and strong, One of the hearts to lean on When we think all things go wrong.

I turn at the click of the gate-latch And meet his manly look; A face like his gives me pleasure, Like the page of a pleasant book. It told of a steadfast purpose Of a brave and a daring will, A face with a promise in it, That God, grant the years fulfill.

He went up the pathway singing, I saw the woman's eyes Grow bright with a worldless welcome

As sunshine warms the skies, "Back again, sweetheart mother," He cried and bent to kiss That loving face that was lifted For what some mothers miss.

That boy will do to true depend upon; I hold that this is false— From lads in love with their mothers, Our bravest heroes grew Earth's grandest hearts have been loving hearts

Since time and earth began; And the boy who kissed his mother Is every inch a man.

—From the Christian Intelligence.

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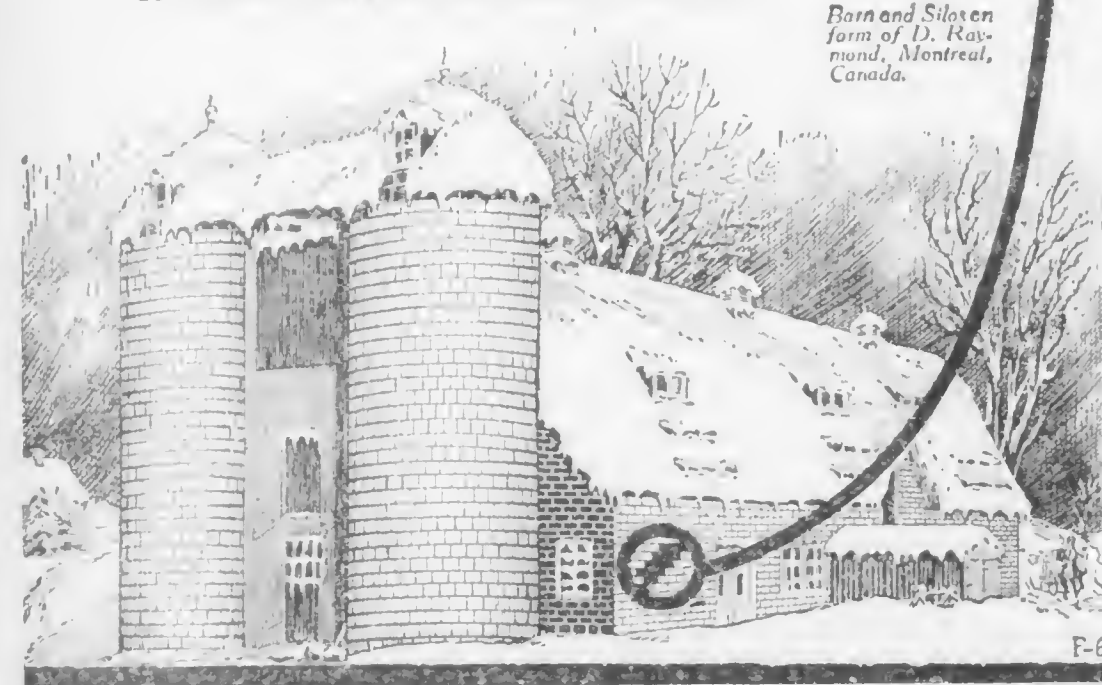
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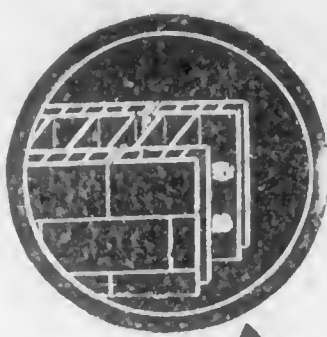
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still air spaces.



WINTER FEEDING AND MANAGEMENT OF BROOD SOWS

The success or failure of the spring crop of pigs will depend to a large extent upon the method of feeding and management that is followed during the winter. If the brood sows do not receive the proper care during the gestation period the owner should not expect a strong healthy crop of pigs. The first essential is to see that all the sows are bred and that it is done at as near the same time as possible without overworking the herd bear or having too many litters come on the same day. Early spring pigs will as a rule develop better and are more satisfactory than late spring or early summer pigs.

The quarters in which the brood sows are kept is important. The place should be comfortably warm and dry. It is not necessary to have expensive buildings, but a place where the sows will not suffer from cold and rain or snow is necessary. If early spring pigs are raised it is necessary to have a warm, dry barn of some kind to be used as a farrowing house. The pigs cannot be farrowed in a house that is cold, dark and damp and be expected to develop rapidly. If they can be kept in a warm dry place for a few days after farrowing they will usually withstand the spring cold without trouble.

Sows that have been bred for spring farrowing should be separated from the balance of the herd. Open or bred gilts should be kept in a separate lot from mature sows as they as a rule require more home building material than the mature sows. Pigs or shoats that are being fattened for market should never be kept with the brood sows. They require a ration that is more fattening in character and can also be confined to a smaller lot than brood sows. Mature sows and bred gilts require a ration that carries plenty of bone and muscle building material. This is not so essential for the proper maintenance of the brood sows but for the proper development of the unborn pigs.

Exercise is fully as important as the sleeping quarters and the feed which the sows receive. It is practically impossible for a brood sow to produce a strong thrifty and healthy litter if she does not get a certain amount of regular exercise during the gestation period. Exercise is not only conducive to producing a strong litter of pigs, but the sow is in better physical condition and will recover much sooner from the effect of farrowing.

Brood sows and gilts will as a rule take sufficient exercise if allowed to range over quite an area and not supplied with too much feed. If the range is limited or there is too much snow for the sows to get out in the field, scatter a small amount of grain or unhusked corn over the snow and let the sows work this over daily for their exercise. If possible to do so, feed the sows some distance from their sleeping quarters as such practice will result in enforced exercise.

Brood sows require a liberal supply of clean drinking water and should be encouraged to drink enough to satisfy their appetite. If the water is cold they will as a rule not

drink as much as their system demands. If it is convenient to do so it is desirable to remove the chill from cold water. If the chill has been removed the sows will relish the water to a greater extent and drink all the system demands.

In feeding the brood sows there are two important factors to be kept in mind. In the first place the feed should be of such a character as to meet the body needs of the animal and also to meet the needs of the developing embryo. In the second place such feeding must be economical.

The kind and amount of feed to allow will depend upon the condition of the sow and the feeds that are available. If the sows are in good condition of flesh at breeding time a lighter ration is required than if the sows are in thin condition of flesh. Sows that are in fair condition of flesh at breeding time and gain from 1 to 1 pound per head daily during the gestation period will not be too fat at farrowing time and do not become too thin while the pigs are suckling.

Corn alone is not a desirable feed for brood sows and when fed alone the crop of pigs farrowed are a disappointment. Corn can form the major portion of the ration but must be properly supplemented with a protein feed. A ration consisting of 8 to 9 parts of corn and 1 part of digester tankage makes a desirable ration for sows. The only objection to such a combination is that it is too concentrated for brood sows. The addition of about 20 per cent of ground oats will improve such a ration so it makes a more bulky combination. Brood sows that receive the grain ration might have access to a liberal allowance of alfalfa hay or good clover hay placed in a rack. It is surprising the amount of hay a group of brood sows will consume, and it has a tendency to keep the sows in good physical condition. The amount of feed to allow per head or per 100 pounds of live weight daily will vary—mature sows should receive about 1 pound of grain daily for each 100 pounds of live weight. Yearling sows and gilts should receive about 1 1/2 pounds of grain daily for each 100 pounds of live weight. In addition to this grain allowance the sows should have access to some nice clean alfalfa or clover hay. Brood sows handled in this manner will usually farrow a good strong litter of pigs that will not be difficult to raise.

JUDGING CONTEST AT PENNA. STATE COLLEGE

The third annual live stock judging contest for students of the freshman class and first year two-year men at the Pennsylvania State College will be held during the last two weeks of the first semester, January 17-29, 1921.

Suitable prizes, in the form of gold medals, have been contributed by well-known Pennsylvania live stock breeders and agricultural publications. The medals for the best judge of all classes of livestock are offered by the Pennsylvania Farmer, Philadelphia, and the National Stockman and Farmer, Pittsburgh. Sheep med-



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The proof is in the

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als are donated by R. L. Munce, Washington, Pa., and the More Sheep More Wool Association of the United States, Philadelphia, Pa. Medals for horse judging are offered by J. N. Conyngham, Wilkes-Barre, and Delchester Farms, Edgemont, Pa. The cattle judging medals are offered by Schaffner Brothers, Erie, and Alex Warner, Titusville. For the swine judges, medals are contributed by Mrs. E. B. Friteche, Douglassville, and George S. Barnhart, Greensburg, Pa.

There are more than one hundred and fifty freshmen and about the same number of first year two-year men who will participate in these contests. Separate contests will be held for the two classes of students and a sufficient number of rings of the various breeds of live stock will be judged to test the judging ability of the students competing.

GETTING WINTER FURS

Because mid-winter furs are the prime and most valuable, trappers should make a special effort to get a large number at this time. It means exposure to cold weather and strenuous work, but the monetary returns are good if the trapper is successful in making very many catches.

Too many trappers, farmers and would-be trappers make a failure of winter trapping, and becoming discouraged, quit just about the time the furs are worth the most money. The reason is the animals begin to live and travel under the ice of streams and ponds, or stay in their dens, as the shunk does, and the trapper thinks it impossible to catch them. Some young trappers are at a loss to know what becomes of the fur animals in mid-winter; because there are no tracks in evidence they think the fur bearers have migrated or become "trapped out." As a matter of fact, the animals have merely retreated to their winter haunts, which is not quite the same as the whole country-side which they rove over in the warm weather of spring and fall.

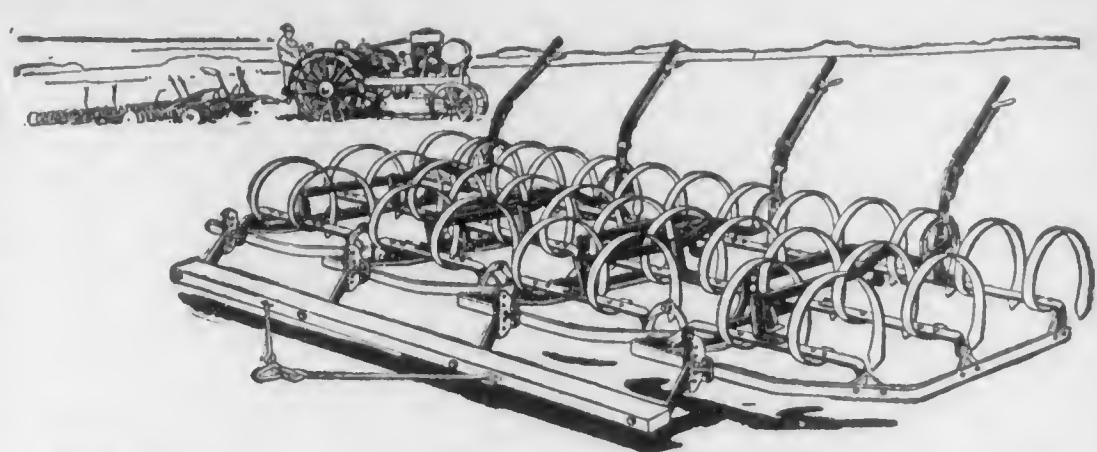
After the ice freezes in the early winter, the water invariably lowers and the ice sags in the middle, leaving a large air space along the banks. These places furnish runways for water animals like the muskrat and mink. By cutting a hole thru the ice, tracks will be observed if there are any animals present and traps may be set accordingly. For instance, I would recommend a blind set for mink and bait for muskrat. A fish bait should attract the mink, but it is advisable to have to use in connection a blind set nearby. The 115-triple clutch trap is an excellent under-ice trap, especially in places where the animal is not apt to drown. In cold weather animals are more apt to twist a foot off and escape—Dick Wood.

A FOREIGN CHILD

In Philadelphia they tell a story of the young matron whose social duties left her little time for her offspring. One day one of the children fell ill, and the mother summoned the family physician. She met him at the door.

"Doctor," she said, "I do wish you'd find out what is the matter with Marie. The French maid left this morning, and there's no one in the house who can understand what the poor child says."

The highest form of salesmanship is nothing but service.



Thorough Seedbed-Maker for Either Horses or Tractor

WHETHER the plant gets the proper start to make it strong and vigorous depends on the seed bed. A seed bed made with a John Deere Syracuse Spring Tooth Harrow promotes rapid plant growth. It gets you the big crops.

JOHN DEERE SYRACUSE SPRING TOOTH HARROW

The sharp-pointed teeth on the Syracuse penetrate to the depth desired, bring the lower soil to the top, break it up and mix it thoroughly, leaving it in a fine, loose, mellow condition. In this loose state it is well aerated, warms quickly, and offers every inducement to quick seed-germination.

Beside making a good seed bed, the Syracuse does another important thing—it destroys weeds. It tears out underground roots and root stems, and kills the weeds before they

get a start. Using the Syracuse thoroughly before planting corn is worth two cultivations after the corn comes up.

The Syracuse Spring Tooth Harrow is of rigid and substantial construction throughout. Its frame, tooth-bars, and teeth are made of special high grade steel. The teeth have no bolt holes to weaken them.

Any number of sections can be furnished to meet your needs. A special hitch also adapts this tool for tractor use.

Write today for a booklet describing these harrows. Address John Deere, Moline, Illinois, and ask for Package SH736

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MORE HORSE POWER

No horse is fit for hard spring work unless clipped. Heavy coats cause overexerting, with loss of vitality to which colds, stiffness, pneumonia and other horse ailments are directly traceable. Clipped horses dry off quickly, rest comfortably at night and are fit and ready.

Spring clipping is the cheapest and best insurance against loss of service from your horses.

A Stewart No. 1 Bull Bearing Clipping Machine costs but \$11—lasts a lifetime. Clips a horse in a few minutes. Get this remarkable machine from your dealer or send \$2 and pay balance on arrival.

CHICAGO FLEXIBLE SHART COMPANY

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Big Fat Hogs! Quicker and Cheaper

Make bigger profits from your hogs! The sure way to raise big, fat, healthy hogs is to feed **Semi-Solid Buttermilk**. Stimulates digestion and makes every bit of feed count. Keeps hogs in perfect condition and fattens 'em quick. Helps prevent cholera.

Semi-Solid Buttermilk

(TRADE MARK)

A pure, rich buttermilk, with water removed to save freight. Absolutely free from injurious preservatives. Kept fresh by its own lactic acid. Feeding Semi-Solid Buttermilk means bigger, healthier hogs. Gets them ready for market in time for top prices! Excellent for poultry, too. Write for Free Book and Sample.

Semi-Solid Buttermilk manufactured exclusively by

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I. H. NESTER & CO., 3 Chestnut St., Dept. 1312

Philadelphia, Pa.

Consent: Enclosed find check for \$1.00 for a sample of Semi-Solid Buttermilk. Ship at once. Any time after this date I will pay you for the same. I have no objection to your using my name in any way in connection with this buttermilk. I consider it the best and most valuable thing I have ever brought to the hogs. Please ship as soon as you can. I don't want to miss a day.

O. B. ROY, Greenfield, Maine

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I. B. BALLARD, Farmville, Tenn.

MEAT MEAL

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Beef, Blood and Bone

A properly proportioned

Concentrated Ration

Better Than Tankage

For Poultry and Hogs

GUARANTEED ANALYSIS

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The Food to Feed to Force the Early Broilers

INCREASE YOUR EGG YIELD

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Better results come from the CON-SOLIDATED DIGESTER TANKAGE than from any other hog food. It is the only hog food that is guaranteed to give the best results. It is the only hog food that is guaranteed to give the best results. It is the only hog food that is guaranteed to give the best results.

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Bog Spavin

Fleming's Spavin Liquid

overcomes the most stubborn

case of bog spavin in a few days.

It is the only medicine that

guarantees a cure. It is the only

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Wonderful Offer

Men's Overalls

Finest quality, indigo blue

denim, strong and durable,

double stitched through,

handy pockets, can with-

stand toughest wear. Sizes

36 to 44. Just the thing for

use in and around the farm.

Unusual value. \$2.50

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Pay upon receipt of parcel,

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Coldest winter days are warm as toast in the home that has an Andes One Pipe



"It certainly does a boy's heart good to have a letter like this from mother"

I BELIEVE the most appreciated gift I ever gave father and mother was that Andes One Pipe Furnace. And I can't blame them a bit for being so tickled with it, because it just seemed to change that old house that had always been so cold and draughty in winter into the nicest, warmest, most comfortable place you can imagine.

Mother has something nice to say about it in practically every letter. She and father have always joked about going South, where it's warm, to spend the winter, but now she says she doesn't want to go. The Andes has transformed the house and they are just as comfortable and cozy as they can be, no matter how cold it is outdoors.

If I were going to tell anyone about the Andes, there are four things I would mention. First, the beautiful heat it gives; second, the fact that it can be installed and be in complete working order inside of twenty-four hours, without any of the confusion or expense of ripping open floors and walls to put heat pipes in; third, that it always saves fuel money, having sometimes cut down fuel bills as much as one-third and even one-half; and fourth, that the Andes people give you a guarantee like this—if you are not absolutely satisfied with your Andes System One Pipe Furnace, it will be taken out and the full purchase price returned to you.

And then I would point to the hundreds of testimonial letters that have been received, and show pictures of houses where the Andes has been installed. For instance, the picture of the house on this page is reproduced from a photograph of Mrs. Mary Warman's house in Pen Argyle, Pa. Mrs. Warman says: "Gentlemen: My house is hard to heat, but with the Andes One Pipe I find it properly heated all over. The Andes is very economical in use of coal."

Unless you have an actual furnace in front of you, it's

ANDES
SYSTEM
ONE PIPE FURNACE
"Better Heating for Less Money"

"—and I want most especially, my dear boy, to thank you for the Andes One Pipe Furnace you put in for your father and me. I don't know what we should do without it. The house is lovely and warm all the time and your father says the furnace doesn't burn nearly as much coal.
With love Mother

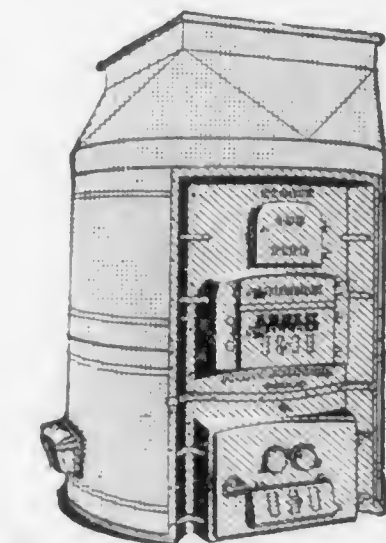


"Tell him it saves fuel money, too"

pretty hard to explain the details that make it a coal-saver, but this may give you an idea.

In order to give good heat, a One Pipe Furnace must have good circulation, and this circulation depends on what is called the inner casing. If this inner casing gets hot, it slows down the circulation or almost stops it, so you see it is an important part of the furnace. Most inner casings are made of black iron lined with asbestos, but in spite of being lined with asbestos, they get hot and hurt the circulation.

The Andes inner casing has two walls of galvanized iron with a dead air space between, and it doesn't get hot or let heat through, so that circulation is always good. If the circulation is poor you can burn coal and burn coal without heating the house, but in the Andes One Pipe you get all the benefit there is in every pound of fuel.



The Andes can be installed in twenty-four hours

If there is an Andes

In Andes makes this house snug and warm no matter what storms may rage dealer in your town, he can tell you a lot more about the Andes, but if not, and if you want a good, dependable heating system, I'd advise you to write to Phillips & Clark and ask for a copy of their free book, "Better Heating for Less Money." If you write today, you ought to get it in two or three days time.

PHILLIPS & CLARK STOVE CO., Inc.
DEPT. P. GENEVA, NEW YORK
Makers of the famous Andes Stoves & Ranges

Phillips & Clark Stove Company, Inc.,
Dept., P. Geneva, N. Y.

Gentlemen:
I am interested in saving fuel money. Please send me your free, illustrated booklet called "Better Heating for Less Money."

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Vol. 49—No. 5

PHILADELPHIA, PA., SATURDAY, JANUARY 29, 1921

75 Cents per Year

Providing Pure Fresh Air in the Barn

Directions for Installing a System to Insure a Well Ventilated Stable—By Harley M. Ward

BARN ventilation is necessary to regulate temperature, to remove moisture and manure odors, and to provide pure air. Air once breathed, as is harmful to cattle when breathed a second time, as it is to human beings. We are all familiar with the evil effects that a poorly ventilated room has on the general vigor of a human body. The effect on animals is similar. In states where it is necessary to keep animals in the barn during the long winters, and especially in dairy barns where cattle must be given the best of care to secure the greatest financial returns, a ventilation system is absolutely essential.

The King system of ventilation, devised by Professor F. H. King, is a system which has come to be generally adopted for barn ventilation. This system of ventilation has been widely used in all climates and has proven as satisfactory as can be expected from a partially automatic system. No ventilating system yet devised is entirely automatic and the King system will need some attention.

In northern parts of the country the temperature is at times so low that an adequate supply of air cannot be supplied, but under general temperature conditions it is possible to ventilate the barn adequately, if the proper attention is given to the King system.

The efficiency of this system of ventilation depends on the location, size and straightness of the intake flues and outlet flues, practically airtight, non-conducting walls and ceiling, and good tight doors and windows.

The fresh air enters the intake flues, passes

between the studding, and enters the barn directly below the ceiling. As in any natural or automatic system of ventilation, no provision can be made to warm the incoming air except the heat supplied from the bodies of the animals. The fresh air brought in must, therefore, be warmed by mixing with the warm air in the barn at the ceiling before it is breathed by the cattle.

These fresh air intakes are located at intervals along the side of the barn wall. The minimum length of the flue must be three feet to guard against air flowing outward. It is very important that the inlet flue be covered with fine wire screen to prevent it from becoming obstructed. A damper should be arranged to open and close so as to prevent drafts and to keep the stable from becoming too cold during the winter season. A register, similar to those used for a hot-air furnace, may be installed in place of the damper.

Foul-air flues are made of either galvanized iron, insulated, or of paper and lumber. The design of these flues is of the greatest importance to the success of the King system of ventilation. They should be as straight as possible, for every turn or bend reduces the carrying capacity of the flue. If necessary to pass around a bend, the flue should be enlarged so that its capacity will not be reduced. As the ventilating flue acts as a chimney, it should have the same qualities. It should rise above the highest part of the building in order to receive the full force of the wind, for the velocity of the wind helps to make the flue "draw."

The location of the outlet flues is important.

They should not be too close to the heads of any of the animals, as all foul air passes directly by these animals and is breathed by them. The outlet flue should not be near the door where the opening of a door would break the drawing action of the flue.

In this system the total area of the outlet flue should practically equal the area of the inlet flues. The doors and windows should be tight so that the system will be efficient.

In figuring the size of flue the number of animals should be carefully considered. The following table taken from King's Physics of Agriculture will be found to be of service in computing the size of the inlet and outlet flues.

Amount of air required for barn ventilation:
For horses 71 cu. ft. per animal
For cows 59 cu. ft. per animal
For swine 23.3 cu. ft. per animal
For sheep 15.3 cu. ft. per animal

Assuming that air travels thru a flue from a stable at the rate of 250 to 300 feet per minute, we may determine the size of outlet and inlet as follows:

Total number of cubic feet of air required, divided by 300, multiplied by 144 (square inches in 1 square foot) equals total cross sectional area in square inches of inlets or outlets.

Total cross sectional area of inlets divided by the number of inlets equals cross-sectional area of each inlet.

Total cross-sectional area of outlets divided by the number of outlets equals cross-sectional area of each outlet. Make outlets a little larger than inlets.—Harley M. Ward, Wheaton, Ill.



A Dry, Light, Well Ventilated and Sanitary Barn is More Profitable and Gives Greater Satisfaction

UNITED STATES CREAM SEPARATOR

Latest Models
with Perfected
Disc Bowl

FACTORY
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SAVE
\$25 TO \$40

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DEMONSTRATION OFFER

What size separator do YOU use? Here is your chance to get a *United States* with all the latest improvements—the perfected disc bowl and all—at a saving of \$42, \$28, \$25, or \$22, depending on capacity.

A few live dairymen in every community are going to snap up this greatest cream separator value ever offered anywhere. The time is limited; the number to be distributed is limited. It's an act-quick offer—good only until **APRIL 1st.**

A Separator You Know About—at a Price You Never Expected

Think of it! Have you ever seen such a liberal offer before—from a manufacturer of ANY standard, well known separator of national reputation? This offer comes from a 50-year-old manufacturer, known everywhere for reliability of product.

No "strings" at all; not the least element of chance. Every separator is sold with our **unlimited guarantee of money back** if you want it, after a fair trial. Every separator has all of our very latest improvements including the Perfected Disc Bowl—a marvel of easy cleaning, perfect skimming and easy running.

We ask nothing in return for our great Demonstration Offer price-saving except that you use the separator and tell your neighbors what you think of it. That is all we ask; we know the effect will be well worth the sacrifice we are now making.

These great "DEMONSTRATION" savings only apply on orders direct from factory—until **April 1st.** Here is just what you get, and what you save:

No. 22, 1350 lbs. or 169 gallons **Save \$42**
No. 24, 1000 lbs. or 125 gallons **Save \$28**
No. 25, 750 lbs. or 94 gallons **Save \$25**
No. 27, 500 lbs. or 63 gallons **Save \$22**

Naturally we must limit the number for distribution in each township. Be sure to send in the application coupon **TODAY** so you will be one of the fortunate ones in your community. No obligation whatever; decide after you have the complete details.

No Other Separator CAN Equal a United States because there are so many exclusive patented features that make it a labor- and money-saver every day you use it. It would take a book to tell all about these improvements; it will take only a few days for you to **DEMONSTRATE** them for yourself. You'll appreciate the one-piece frame; no corners to collect dirt. The easiest running, easiest cleaning and closest skimming bowl made. No fussing with numbered discs; they assemble quickly in any order. All gears enclosed and run in oil bath. Low crank speed, 42 to 48 turns. Equipped with speed indicator bell. Scores of other mechanical refinements that make the *United States* a labor-saver at every turn. Every *United States* sold under our **UNLIMITED GUARANTEE**

YOU are the sole judge; your money back, if you want it, after a fair trial. Send the coupon NOW—while you think of it.

VERMONT FARM MACHINE CORP., Bellows Falls, Vt., U. S. A.

DEMONSTRATOR APPLICATION

Vermont Farm Machine Corp., Box B, Bellows Falls, Vt.

I am interested in your Demonstration Offer and would like catalog and full details. This is with the understanding that there are no "strings" to the offer and that my application will be given immediate attention.

I keep _____ cows. Would be interested in your No. _____ Separator. I am at present using a _____ Separator.

Name _____

I wish to buy on _____ terms.

Cash or Easy-Payment

Name _____

Post Office _____

Township _____

Soils and Fertilizers

Conducted by Dr. J. G. Lipman

Our readers are invited to send us their problems on soils and fertilizers and they will be answered by Dr. Lipman in this column.

COVER CROP

Dr. Lipman:—Could you give me some information on the following problem. I have an acre or so of land (De Kalb gravelly loam) which has been planted to peach trees for the past twelve years. These trees have now been removed and I wish to plow under a cover crop of some kind for several seasons before resetting to peaches. This land will be plowed and put into good mechanical condition in the spring. Would you advise sowing cow-peas? If so, kindly state what variety, amount and kind of commercial fertilizer, quantity of seed to acre, time of sowing, etc. I had thought of waiting until fall and seeding it to rye, but perhaps cow-peas or some other crop would be used to more advantage.—G. T. K., Maryland.

G. T. K., Maryland:—It would not be necessary to take two or three years for improving the land for the new peach orchard. It will be quite feasible to grow some crop that would return a fair profit and at the same time permit of the improvement of the land. Crops like sweet corn, tomatoes, beans or even field corn could be utilized for this purpose. It might seem desirable to seed the land down to alfalfa, to harvest the hay for two or three years and then plow the sod preparatory to planting the trees. If, for some good reason, it does not seem advisable to grow a money crop on the land while it is being improved by means of cover crops, it might be advisable to use a spring cover crop rather than wait until June or late May for the planting of cowpeas or soybeans. Crops like spring vetch or mixtures of Canada field peas and barley or oats would be satisfactory. These could be plowed under in the late summer and a fall cover crop, like crimson clover, winter vetch or alfalfa, used for plowing under in the following spring. By this method organic and nitrogen could be accumulated in the soil more quickly than by the use of cowpeas alone. It is probable that for legumes like spring vetch, cowpeas, crimson clover, winter vetch and alfalfa acid phosphate alone, used at the rate of 50 to 600 pounds per acre, would be all that is needed. This rather generous application of acid phosphate would not only give the legume cover crops a good start, but would also permit the accumulation of a reserve of phosphoric acid in the soil.

If spring vetch alone is employed, it might be used at the rate of about one bushel per acre. When used together with oats or barley three-quarters of a bushel of spring vetch and one to one and a half bushels of oats and barley should give good results. In the case of cowpeas, when broadcasted, the seed should be used at the rate of one and one-half bushels per acre. It might be well, however, to grow a mixture of cowpeas and soybeans rather than cowpeas alone. In that case, one bushel of cowpeas and one-half bushel of soybeans per acre, broadcasted, should permit the accumulation of nitrogen to good advantage. The soybeans are recommended since they are a more efficient crop for gathering nitrogen from the air than are cowpeas. On the other hand, they need inoculation where grown for the first time, whereas cowpeas seem to do fairly well on poor gravelly soil even when not provided with artificial inoculation. Among the varieties of cowpeas and soybeans that are recommended as having given in the past fairly consistent results mention may be made of Whippoorwill, Wonderful and Clay for cowpeas and Mammoth Yellow for the soybeans.

As to the time of sowing, the spring cover crops may be sown as soon as the ground is fit to work in the spring. The summer cover crops like cowpeas and soybeans, may be planted in Maryland about the middle of May or thereafter. Crimson clover, winter vetch and alfalfa may be

sown between August 20th and September 1. It should be added here that, if any of these crops could be utilized for soiling purposes or for making into hay, two crops could be readily grown in one season while the land is being enriched in organic matter and nitrogen. It might also be added that, under this intensive method of using the land, it would be desirable to use in addition to the acid phosphate recommended moderate quantities of potash, say at the rate of 50 to 60 pounds of muriate of potash per acre.

LIMING QUESTION

Lime for Soybeans

Dr. Lipman:—Will you please give me a little information on the following questions in your paper. Should soil that is sour be limed to get a good crop of soybeans? What is the best way to inoculate for them? My ground on which is truck, is sour. Lots of manure has been plowed under. Would it be harmful or of advantage, to plow early, then lime and work in well? My beets last year, had plenty of tops, but no beets. I presume that is from sour soil. How will spring liming act on beets? Where I intend putting oats would like to get that in soil. What is the best combination of grass seeds to sow with the oats?—Reader, Berks Co., Penna.

An Interested Reader, Berks County, Pa.—Soybeans will stand more acidity in the soil than clover or alfalfa. Nevertheless, this crop is distinctly benefited by applications of lime. It would appear from your statement that your land is not excessively sour. This is usually the case where large quantities of manure have been used in the past. For this reason, an application of one to one and one-half tons of ground limestone per acre, or of 1500 to 1800 pounds of hydrated lime per acre, should be sufficient. It would be best to plow the land early and to work the

to 15 pounds per acre. It may seem desirable to use equal parts of alsike and red clover rather than red clover alone. If it is intended to use the meadow for pasturage purposes rather than hay, seed of other grasses and legumes should be used. A mixture that should give good results in Berks County would consist of alfalfa—5 lbs., alsike clover—2 lbs., white clover—2 lbs., orchard grass—4 lbs., meadow fescue—4 lbs., timothy—5 lbs., and red top—2 lbs.

BARIUM PHOSPHATE

Dr. Lipman:—My fertilizer problem at this time is what is the relative value of Barium Phosphate 23 per cent phosphorus and 7 per cent Barium Sulfide, to that of 16 per cent acid phosphate. What per cent of this Barium Phosphate is soluble or available?—L. L., Clearfield Co., Penna.

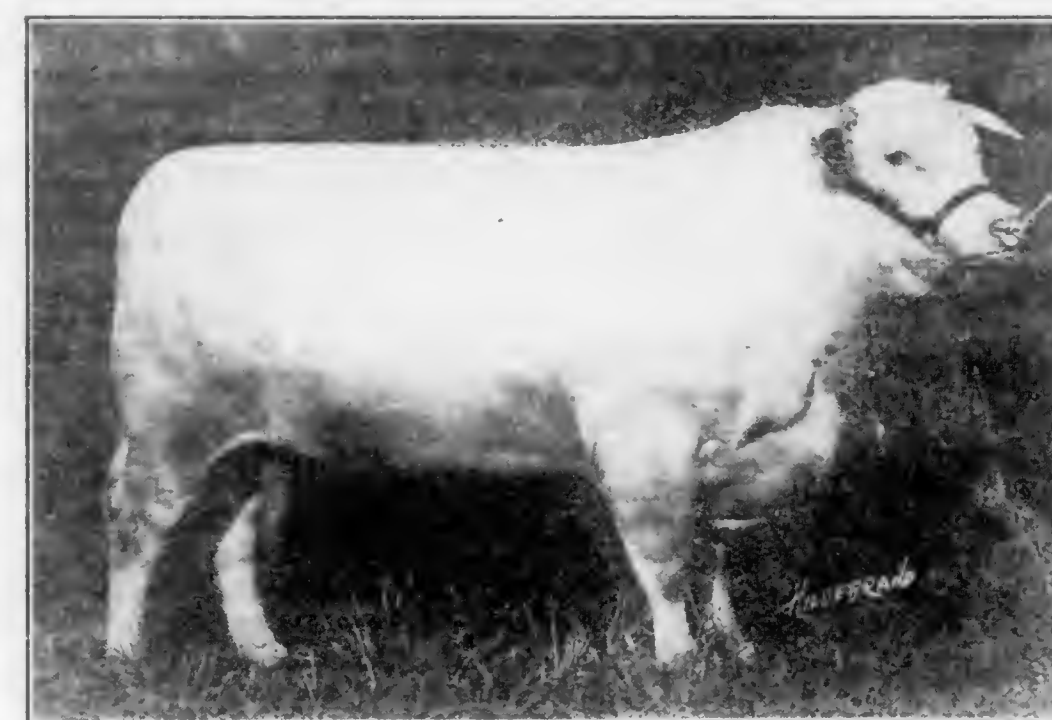
L. L., Clearfield, Pa.—Since Barium Phosphate is made up of a mixture of ground phosphate rock and barium sulfide, it should be considered as a fertilizer belonging to the same group in which are included acid phosphate, basic slag, bone meal and ground phosphate rock. Barium Phosphate is guaranteed to contain 23 per cent of total phosphoric acid. It is not claimed for it that the phosphoric acid is available by the chemical method employed by the Official Agricultural Chemists. On the other hand, it is claimed for it that the presence of the barium sulfide makes Barium Phosphate superior to ordinary ground phosphate rock containing the same amount of phosphoric acid.

A number of experiments have been carried out with Barium Phosphate by the Rhode Island, Massachusetts and New Jersey Experiment Stations. In several of these the Barium Phosphate did not give any better results than did ordinary ground phosphate rock. In some of the experiments the evidence was not conclusive, since the soil on which the material was tried was well supplied with phosphoric acid. It is safe to state that Barium Phosphate, when used together with manure, will give results at least as good as those given by ground phosphate rock similarly used. In some instances it will probably give better results. Where crops like vegetables, potatoes, berries, etc., are grown, it would not be wise to depend on Barium Phosphate to furnish the phosphoric acid promptly enough to supply the maximum needs of the crop. On the other hand, in the case of meadows and orchards Barium Phosphate, if the price is not excessive, would make a fairly good showing.—J. G. Lipman.

HIGH GRADE FERTILIZERS ARE CHEAPEST

The term "high grade," as applied to a fertilizer, indicates that it contains larger amounts of nitrogen, phosphoric acid and potash, as for example, a 4-10-4 formula grade, as compared with a low grade fertilizer having a 1-6-1 formula and supplying considerably less plant food to the ton. The results of several seasons of fertilizer inspection work by the Bureau of Chemistry, Pennsylvania Department of Agriculture, clearly indicates that more plant food for the money can be had by purchasing high grade fertilizers.

A study of the retail selling prices prevailing for the brands of fertilizers received and analyzed during the spring inspection season of 1920, shows wide variations in selling prices not only for the different brands supplying large and small amounts of plant food, but for those fertilizers supplying like amounts of plant food and having identical formulas. These values show that if a purchaser demands high grade fertilizers and watches the prices charged as a rule such grades of materials can be purchased cheaper than low grade fertilizers. As an illustration of this point, among the spring brands of complete fertilizers there were 75 different formula grades. There were 33 brands having the formula 2-8-2, which supplied on the ton basis, 40 pounds of nitrogen as ammonia, 160 pounds of available phosphoric acid and 40 pounds of water soluble potash, which sold at a retail price of from \$38.47 to \$52 a ton, showing a difference of \$13.53 a ton for fertilizers supplying the same amount of plant food.



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DISAPPROVES LEAGUE'S PLAN

Note—The Editor of Pennsylvania Farmer has felt that the wisest course for members of the Dairymen's League to pursue under the present conditions is to hold their organization together and pool their interests for the time being. This seems to be the only thing that can be done to defeat the enemies in their efforts to break up the producers' organization and get back to the back-door plan of individual contracts. However, we believe in giving all sides a hearing and willingly publish the following communication, altho we do not agree with the writer.—Editor.

Editor Pennsylvania Farmer:

There seems to be a great deal written urging the new contract proposed by the Dairymen's League, but there is an opposite side to the question.

Two propositions that the League accepts are fundamentally wrong. One is that the price of milk should be based on cost of production plus a reasonable profit, and the other is that they can sell their milk better by salaried managers than to companies or individuals that work for a profit. Both of these ideas are contrary to the well established principles of political economy and can not work out.

During the war and while there was a great scarcity, articles could be sold for cost of production plus a reasonable profit, but now that there is an over production the price must be regulated entirely by the supply and demand.

Two weeks ago the creamery here was stopped from selling their milk in New York city and their regular trade was lost. Consequently on Jan. 1, the plant was closed and the farmers must find other markets for their milk.

We have a contract with the League to sell our milk, but all the League has done was to tell us to do the best we could. We have tried the other creameries of the vicinity and they say that already they have a surplus of milk on which they are losing 80 cents a can by making it into cream. We have no market for our milk and must lose money on our cows and on our feed.

The price of milk has been too high for several months back and dairymen have been so profitable that farmers have gone into it too strongly, bidding up the prices of cattle and of feed until there has grown an over supply of milk. Still the League is trying to keep up the price of milk to what they call the cost of production and a reasonable profit.

Who knows what it costs to produce milk? I do not, but I do know I have been selling milk and have had a good living from it, and that other farmers are neglecting other lines of farming and going into the milk business and make a profit. The Warren formula and figures of professors to the contrary notwithstanding.

On a farm of 80 acres I keep ten cows feeding them home grown alfalfa, corn stalks, cob meal and oats. All the feed I need to buy is a little oil cake meal, cottonseed meal and wheat bran and if milk goes on down I need not buy that. Some milk producers would like the small producers to quit as they can produce milk too cheaply.

Rather it is the big producers that should quit and let the man who can produce good milk most cheaply keep at it.

The price of milk must be based on the demand and supply regardless of cost and then the producers must keep their costs down to sell their milk at a living profit.

The other mistake the League is making is the attempt to crowd out the dealers. The handling of market milk requires men of ability, and such men do not work for salaries when they can establish a business for themselves and do the same work for a profit. So I do not place much confidence in the pooling system proposed by the League. In this section of New Jersey each railroad station has its creamery, owned and operated by a different dealer. This man does the best he can for the profit that is in the business and the League will be unable to get salaried managers to do as well as an owner who is working for a profit and therefore is on the job day in and day out. In public affairs among farmers at least everybody's business is nobody's business, and it is my impression that league business will get to running the same way, unless human nature is very different from what I regard it.

The Dairymen's League is good if it continues to sell the milk for a commission as it has been doing and to protect the producer from being imposed upon by the dealers, but I believe it should co-operate with the honest dealer instead of attempting to crowd him out and monopolize the market.—J. D. Craig, Hunterdon Co., New Jersey.

BOOSTING THE POOLING PLAN

Following the change in officers and directors of the League, when George W. Slocum, of Pennsylvania, replaced R. D. Cooper as president and six new directors were chosen, all hands have been working to boost the pooling plan whereby the proceeds of all members would be pooled, regardless of the outlet thru which the milk was marketed. This renewed effort has brought in the contracts, and early in January there were 33,000 members of the League who had signed the individual contracts granting their right to the League co-operative to handle their product in this way. As a result the time is approaching when the co-operative will be in full swing, definite plans for which are now being worked out and will be put in operation as soon as 50,000 contracts are assured.

The Dairymen's League was preparing to move its offices to Utica, N. Y., and hoped to be in its new home by February 1. A sales office is maintained in New York city at the old address where the selling force can keep in direct touch with the dealers and the open market. A representative also continues in New York to present the good work of the League to city consumers and so encourage good will between the League and the consuming public.

In early January, the large milk distributors claimed a surplus of fluid milk on the eastern markets, stating that consumers had cut down on their purchases and that milk had been re-

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turned to them. During the last month the League has maintained a small group of assistants in the field to straighten out irregularities and to build up the League where it was weak.

The league price of \$3.18 a 100 pounds is the base price for 3 per cent milk in the new 45.5-cent freight zone from New York city, which corresponds exactly to the quotation formerly announced as for the 200-mile zone. To this should be added four cents a 100 pounds for each additional one-tenth per cent increase in fat. The price of market milk delivered at Philadelphia, under arrangements with the Interstate Milk Producers' Association, continues at 8 cents a quart or \$3.68 a 100 pounds for 4 per cent milk which is the same price as in December. The association comprises about 11,000 producers in the Philadelphia district. At Pittsburgh the farmers get \$2.90 a 100 pounds for 3.5 per cent milk in January, which is a lower figure than in the previous month. Many other eastern markets suffered slight reductions, as normal for this season of the year, while Syracuse, Rochester and Albany were unchanged when sales were conducted on the Dairymen's League basis.—H. T. B.

PROBLEMS BEFORE MILK MEN

The market milk situation in the area covered by the Dairymen's League and in fact over the eastern territory showed little improvement in January. However, prices have held up fairly well in eastern markets where the farmers' organizations are strong, and the Dairymen's League price of \$3.18 per 100 pounds continued as in December.

Dealers who held large supplies of manufactured products are reported to be gradually diminishing their holdings, and with much of the new milk going into butter and cheese the situation appears brighter than for some months. The co-operative plants now owned by the League have been running to capacity, some taking only cream and some taking whole milk. The manufactured products are sold upon the open market by the co-operative association just as soon as they are made. In certain territories farmers at a distance from league plants have had to make the best of facilities at hand and in some cases have suffered heavily.

More butter and cheese than ever before has been turned out by the farmers themselves. One good effect of this has been that also consumption has decreased rapidly in certain districts where reliable figures had shown that considerable substitute was used. The present situation has made skim milk about the cheapest live stock feed on the market. At some points the skim milk has a nominal value of only 10 cents a 100 pounds or a little more than a fifth of a cent per quart.—H. T. B.

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HORTICULTURE

Pa. Fruit Men Will Soon Supply Local Markets

PENNSYLVANIA is rapidly gaining in the production of apples for its own markets, said Prof. S. W. Fletcher, horticulturist for the Pennsylvania State College of Agriculture, before the sixty-sixth annual meeting of the New York State Horticultural Society at Rochester, N. Y., January 12 to 14. Until recent years the Keystone state was an excellent market for New York apples, but due to recent development of commercial orchards especially in the southeastern counties of the state will grow enough apples for the local markets within the next 15 years. Reviewing the growth of horticultural interests, he pointed out that only half of the commercial orchards in the state are now bearing.

Prof. Fletcher also said that the automobile and the auto truck were the chief means of carrying Pennsylvania apples to market, since in most cases the large industrial counties consume nearly all the fruit and still have to purchase from a distance. Only 10 per cent of the apples grown are sold thru commission merchants, nearly all being marketed by direct sales to the dealers or retail trade. With reference to the growth of commercial fruit growing in the southeastern counties, Prof. Fletcher said that the growers of this section must come to co-operation and standardization of their product to compete in the open markets when their orchards come into full bearing. The co-operative central packing house development in New York state, he indicated, was an example which the Pennsylvania fruit men must follow before many years have passed.



Countess Prue, 43785; 18,627 Milk, 1103.28 Butterfat

Commenting further upon the need of standardization of market fruit packs, Prof. Fletcher expressed his approval of the federal apple grading and branding law, a measure so flexible, however, that each state would have some freedom in adapting its provisions to the needs of that particular state, especially with reference to such qualities as color. The many fruit men who have been practicing the sod-mulch system in their orchards for years were interested in his comments on sod orchards. It seems that more than 50 per cent of Pennsylvania's commercial orchards

are in sod, while 96 per cent of the farm orchards are likewise in grass. In fact the sod system has grown in favor in recent seasons, perhaps due to lack of labor. Prof. Fletcher freely admits that he is a convert to the sod method on heavy orchard land. Of course there are many exceptions to the practice in Pennsylvania, but on sod he believes that it surely pays to fertilize the orchard. Where no manure is available he suggests a fertilizer analyzing 1 per cent nitrogen, 10 per cent phosphoric acid, applied at the rate of 300 to 500 pounds per acre on mature trees. Recent studies in Pennsylvania indicate that very heavy dormant pruning dwarfs rather than stimulates apple trees. He commented favorably on the diversification of crops as practiced on the large western New York fruit farms, and

believes that such methods might be followed to a greater extent in Pennsylvania. Orchard Fertilizing Problem
Reviewing a series of five orchard fertilizing experiments over a period of 20 years, Prof. U. P. Hedrick, horticulturist for the experiment station at Geneva, N. Y., and noted authority on orchard fertility, said that orchards in western New York which were well drained, well tilled and well supplied with humus from cover crops did not respond to a generous treatment of fertilizer. It must be remembered that these experiments were conducted under conditions most favorable for orchard growth and do not apply to sod orchards or orchards on rough, stony or sandy land, which may naturally be weak in plant food elements. It is possible and probable that there are many exceptions, Prof. Hedrick said. Continuing, he pointed out that orchards on poor, sandy, gravelly soils, all sodded orchards, those on soils so shallow, hard or stony that the root-run in restricted, those on soils too wet or too dry for the proper sustenance of soil bacteria, all may need fertilizer. Orchards that have not had generous treatment in tillage and cover crops, may be benefited by fertilizer. No doubt many apple orchards in New York will respond to applications of one of the elements

fertility. Some may require two of the elements. A few, indeed, may respond to a complete fertilizer. After attending to drainage, tillage, spraying and the less expensive items of care the grower should obtain positive evidence as to what food elements his trees need. To secure such evidence he must observe and experiment in his own orchard.

New York President Reports Loss

The average fruit grower this season did not cover expenses on his apples, said H. E. Wellman, of Kenilworth, N. Y., retiring president of the New York State Horticultural Society, as he discussed the experience of New York growers with the 1920 crop. According to exact figures gathered by county agents and other official representatives this year, it cost \$3.70 a barrel to produce apples in western New York, and \$4 a barrel in the Hudson valley. At the same time the average net price to New York growers was around \$3 a barrel, a loss of 75 cents to \$1 in many cases. Mr. Wellman believes the fruit men should join with all other farm organizations to fight daylight saving, and in various states it will take the earnest work of all farm interests.

The New York fruit growers in their annual business session approved of the economy program of Governor Miller of New York, a retraining program in the administration of state funds which has received so much discussion among farm organizations in various states. The New York horticulturists believe in a return to the peace-time and the reconstruction of business methods so that fruit men and farmers will be in a position to sell their products at figures that cover the cost of production. Hunters have given so much trouble in New York state in trespass and destruction of life and property that the fruit men have joined with other farm organizations in demanding a law which requires a hunter or fisherman to get written permission.

Officers of the New York society for the coming year are: President, T. E. Cross, of La Grangeville, N. Y.; first vice president, J. B. Pease, of Gasport, N. Y.; second vice-president, F. W. Cornwell, of Pultneyville, N. Y.; third vice-president, B. G. Wilson, of Watertown, N. Y.; fourth vice-president, B. J. Case, of Solus, N. Y.; secretary-treasurer, Roy P. McPherson, of LeRoy, N. Y. The executive committee is composed of W. Ten Broeck, of Hudson, N. Y.; G. W. Dunn, of Webster, N. Y.; W. R. Clarke, of Milton, N. Y.; Theodore J. Smith, of Geneva, N. Y., and C. S. Wilson, former New York state commissioner of agriculture. The annual membership fee of the society was raised from \$2 to \$3 a year. H. T. R., New York.

COUNTRESS PRUE 43785 WORLD'S CHAMPION

A new world's champion record of production for the Guernsey breed has been completed by Countess Prue 43785, owned by F. L. Howes of Riverdale Farm, Groton, Mass. On Nov. 29, she completed her year's work of 18,627.9 pounds of milk and 1103.28 pounds of butterfat. Five other Guernsey cows have produced more than 1000 pounds of butterfat, but Countess Prue 43785 is the first Guernsey cow to exceed 1100 pounds of butterfat. This accomplishment brings much fame to Riverdale Farm, to the owner of the cow, and to her caretakers, Harry R. Robblee, manager, and W. C. Burdick, herdsman.

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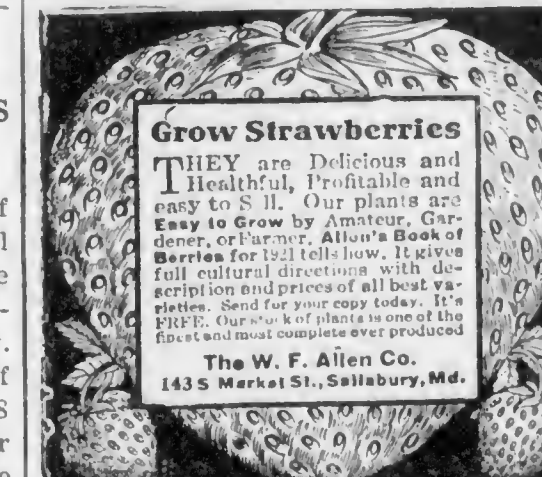
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We'll send you free samples. You buy the seeds you want—if you're not pleased, return them—we'll refund your money. If you need Clover Seed of any kind—Alfalfa—Clover—Oats or other Grass—Field Peas, Beans—Fodders, it will pay you to see our offers.

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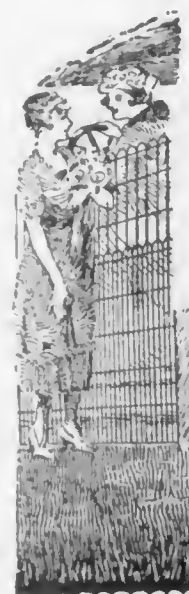
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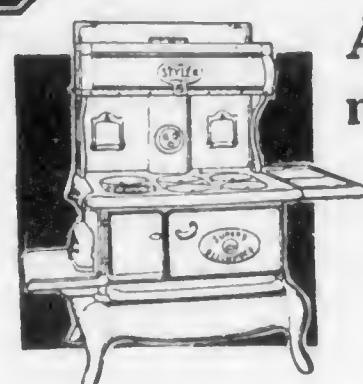


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A Beechwood needs no coaxing!

You're no longer slave to the whims of a range when you own a Beechwood. The extra large fire box holds a banked fire longer without attention. The Duplex Grate in one turn rakes the fire and puts it in shape for immediate cooking without coaxing or delay.

You're through with blacking. A cloth will make the polished top and enameled sides bright and spotless. Three colors, blue, brown, and gray.

Write for illustrated booklet giving details.

The Quakertown Stove Works, Quakertown, Pa.

Beechwood
Heaters and Ranges

IT'S ALL IN YOUR POINT OF VIEW

"What in the world can Mary Adeline want with Ben Stillman? She's such an attractive girl, full of pep and charm. Always on the alert; in fact, the most entertaining girl I know of. And by far the prettiest!"

"You're right, Bertie, she's the most all-round girl in the city. And Ben! Well, Ben's absolutely impossible. He's simply lost when he's out with Mary Adeline's crowd. He seems quite tongue-tied. He can't and won't, they say, dance a step. He doesn't know a brassie from a mid-iron. And I don't suppose he ever held a tennis racket in his hand. He's a real bore. That's what I think."

"Yes, but did you know," quietly interrupted an unobtrusive little friend of Mary Adeline, who was both little and loyal, "that Ben graduated with first honors from his University? That he was on the debating team and the College Glee Club? That he was the captain of his football team? Also, my dears, he worked every step of his way thru college and saw that the little mother at home had all the comforts and a few of the luxuries besides. Mary says he'll be a United States Senator before he's thirty-five. You see, friends, it's all in your point of view."

N. B. Sure enough, Mary's prediction came right.

"There goes that stuffy-minded guest of Emily's. Bouncing around with a new man at her satin heels every hour of the day. Seems to never feel a care or responsibility in the world. And, I've heard she's as poor as a church mouse."

"Why, I wonder," chirped Mrs. Greenback, "isn't she out earning her 'board 'n keep'? I should think she'd not care to be dependent on her moneyed relatives. I never saw a more irresponsible creature in my life! It's disgusting; this day and age!"

But the conversation was changed for The Irresponsible Creature joined the little gossamer clique.

After a few moments tears welled up in her eyes, and—

"Do you know whenever, I see you sweet motherly women sitting around sewing like this, it makes my heart almost stop beating. I once had just such a lovely mother. And she always seemed to have a little mending in her sweet hands. For fifteen years Muzzy was an invalid. I was her nurse all that time. 'Little Pal,' she used to call me. Six months ago Muzzy went away. This little vacation is the first taste of real girlhood I have ever had. But, do you know? The strange part of it all is I wouldn't trade an hour of waiting on Muzzy for six years of this kind of life."

Oh, there's so often a chapter to his or her life's book of which we know nothing at all! We do not see into all the rooms of our friend's homes; neither do we see into all the corners and crevices of their hearts."—Helen Gregg Green.

HOUSEHOLD YARNS

Thrift is the careful use of money and materials.

Does the bowl of breakfast cereal get its share of attention in the children's daily meals?

Sound housing, some wise man has said, should be the aspiration of a man for his family, and of a nation for its people.

Cornmeal is a good food because it is a cheap source of energy. Mush and milk finds its way to the modern table much too seldom.

PENNSYLVANIA FARMER PATTERNS

Give figures and letters of each pattern exactly as printed at beginning of each description or we will not be responsible for correct fitting of orders. Give bust measure when ordering waist patterns, waist measure for skirt, and age for children's patterns. Address Pennsylvania Farmer, 261 S. Third Street, Philadelphia, Pa.

2688.—Patterns for Cap, Baby Boots, Mittens, and Refooting Stockings



An old waist, or set of sleeves, of velvet, silk, serge, cloth, plus or fur will make this jaunty "Tam." Your old felt hat may be ripped, washed and used to make this pair of shoes for baby. You need not throw away small pieces of fur, plush, velvet or your old long kid gloves—even old woolen stockings and sweater sleeves, old worsted scarfs and caps may be used to make warm mittens by this pattern. For resoling and footing stockings, save all your castoff knitted things, your merino and wool underwear, sleeves of an old sweater or a soft shirt to make a pair of socks or stockings by this stocking pattern.

The pattern is cut in 3 sets for ladies', misses and children. The ladies' size requires for cap, 1 1/2 yards of 20-inch material; for pair of stockings, 1 yard of 36-inch material; for 1 pair of mittens, 3/4 yard of 30-inch material. The shoe pattern is cut in only one size (infants), and requires 1/4 yard of 20-inch material. Pattern, 10 cents.

1303.—Pattern for Refooting Stockings

The usefulness of this pattern will be apparent at once to the economical woman, as the soles of stockings wear out long before the leg portion. This pattern gives two different soles, both equally good and shaped so that the seams will not cause any discomfort to the wearer, as darned stockings sometimes do. Expensive silk stockings may be made to do duty twice as long when refooted in this way. The upper part of an old stock will cut the soles for a pair. The pattern is cut in three sizes: 8, 9 and 10 inches. Pattern costs ten cents.



3420.—Accessories For Suit or Gown
The pattern is cut in 3 sizes: small, medium and large. No. 2 will require 7/8 yard. No. 3 will require 1 yard. No. 1 will require 3/4 yard for collar, and 5/8 yard for a pair of cuffs. Velvet, silk, mull, lawn and linen are good for these models. Pattern costs 10 cents.

3488.—One of the Popular Tie-back Blouses
The pattern is cut in 7 sizes: 34, 36, 38, 40, 42, 44 and 46 inches bust measure. A 38-inch size will require 2 3/4 yards of 44-inch material. Embroidered serge, georgette, tricotee, satin, crepe, crepe de chine, linen, voile and batiste are attractive goods for this model. Pattern costs 10 cents.

It is a wise woman who saves the water from cooked rice, macaroni or vegetables and uses it in soups or sauces, thereby adding to the nourishment of her family and to the fullness of her purse.

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If you are a regular customer you will receive a copy of your Bargain Book soon if you haven't already had one. If you are not already a customer we will gladly send you a copy. Prices have reached solid low levels. Be quick to take advantage of them. Our guarantee covers every article.

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Please send free to address below your latest catalog showing the new low prices.

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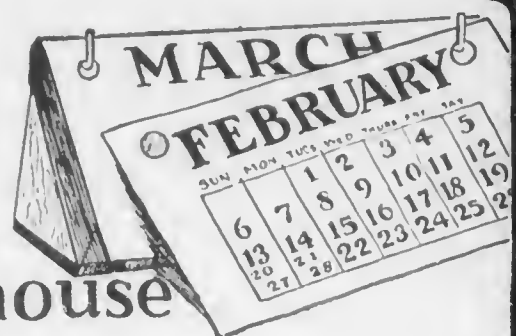
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A warm house



before the winter is gone. It takes but a day to install a New Idea Pipeless Furnace.

Then you'll realize what it means to have a

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in your cellar—to have every nook and corner of the house heated uniformly; no over-hot sitting rooms and ice-cold bedrooms and halls; a cool cellar for storing vegetables.

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heating will cost much less than with stoves and you'll be freed from carrying ashes and coal. You'll have a flood of clean, moist, warm air that will not make you feel "stuffy." The New Idea costs little to install—lower prices again prevail.

Ask the New Idea dealer in your neighborhood to show you all about this furnace and, particularly, the money-back written guarantee of satisfaction that goes with every New Idea.

If you do not know this dealer's name, write us for it and for catalog. Expert advice on all heating problems sent free.

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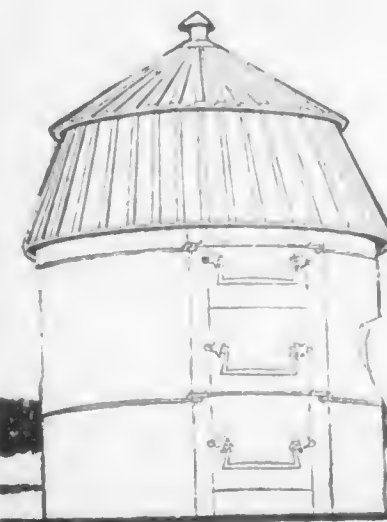
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The patented door of the Unadilla means the difference between safety and danger, between hard work and easy work. You shove out the silage instead of pulling it out, and the door fasteners form a real "ladder" directly under the opening.

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UNADILLA SILO CO.
Box P, Unadilla, N. Y., or Des Moines, Ia.



TALKS WITH THE BOYS

THE EDITOR'S LETTER

To the Boys:

I have had a lot of interesting letters from the boys during the past week. Of course, it is not expected that we shall publish all of them, but they are all welcome and help to tell me about what will interest and help you. So, send them along.

A boy living in the central part of Pennsylvania writes a good letter containing the following:

"My father is one of the old-fashioned kind. He is the best father in this country, or at least the best I ever heard of. But he does not believe that he should feed certain kinds of feed to cattle to get best results. I go to school and like the study of agriculture best as it tells how to farm. I would like to get father interested in the dairy business if I can. Please answer this letter and tell me how to do it."

That boy has the right kind of stuff in him and will make a good farmer providing his father is wise and gives him the right encouragement. Anyway, let the boy go ahead with his studies and the time will come when he can put to use what he learns. There are a great many fathers, unfortunately, who do not believe in adopting better methods. They call them "new-fangled" ideas and think that because grandfather fed nothing to cows but hay, corn fodder and "chop," that that is all that is needed. I hope this boy will be able to convince his father that there may be some things which he does not know. I would like to have a plain, straight talk with him, but of course, I will not give the boy away.

Here is a Maryland boy who is surely in earnest and who is fortunate in having a live school to go to. If all rural teachers had the "pep" that is shown here rural schools would do more for rural children than they do:

"At our school we have club meetings at which time the boys of the club talk on dairying, trucking, mowing, etc. The girls talk on domestic science. At our next meeting we are going to have a debate—Resolved that to future farmers of Urconico County dairying is more promising than trucking. I am on the affirmative side. The debate is to be Jan. 26th. I would very much appreciate it if you would send me a few points on the affirmative side and write a little about each point so I can select from them."

"My father is a pleased subscriber of your paper and we all give it much praise as a farm, dairy, truck, home and poultry paper."—Alonzo Dyles, Jr., Maryland.

A young man of 18 years of age writes that he would like to take an agricultural course at State College, but as he has had to work a great deal on the farm and the home school was never very good he does not have sufficient education to be admitted to college.

This is only too true of most rural communities. The schools have not been of a kind that would fit country children for any kind of college. However, if the young man wants an education hard enough and if there is a high school within reach at all, he is not too old to catch up, providing he will get down and dig. If this is not possible, it is possible to get a good practical education by reading and study at home. Write to the Correspondence Department Agricultural College, State College, Pa., and get information of home

courses by mail. These will help wonderfully.

*Sincerely,
The Editor*

LIKES THE DEPARTMENT

Dear Editor:—I have been reading your challenges to the boys in Pennsylvania Farmer, which were very interesting to me.

I am nine years old and am living on the farm and therefore your editorial about the birds was very interesting to me. I can watch them closely on the fruit-trees, seeing how they pick the insects off the bark. I also will follow your suggestion about helping to feed the birds thru the winter.

Regarding the school work, I can tell you that I am getting along first rate and am now in the fifth grade with the promise of my teacher to be promoted by the end of the term. Hoping you will write more, I am, sincerely yours, Ernest Ruark, Bucks Co., Pa.

CLEAN POCKETS

Two boys went to ask for work. They took letters and cards from parents and teachers to show to the man who had advertised for boys.

The man said he did not care to look at the letters, but asked each boy to take off his coat and place it on the counter.

Then, to the surprise of the boys, the man turned and began to examine the pockets of the coats, taking pains to skip none.

In the pockets of one coat he found a pack of cards, some cigarette pictures, some rice paper and some bits of tobacco; also an empty purse.

In the pockets of the other coat he found a pencil, a note book, a watch giving the correct time, and a pocketbook containing a little money.

To the owner of this coat the man said: "I have hired boys and men for twenty years, and have seldom had trouble with one who could pass what I call the pocket test. You have passed it successfully. Come in tomorrow morning and begin work."

To the owner of the other coat he said "Good day."

TWO ROADS

In winter time it's straight and hard,
The road to Knowledge Land;
By Study Lane and Schoolbook Place,
With pencil in your hand.

Your eyes must see, your ears must hear

The things there are to learn;
And never to the right or left
Your little feet must turn.

But when the summer comes, oh, then
You'll find that Greenfield Way,
And Woodsy Path, and Sunset Hill
Will lead you day by day.

If you will look and listen well
And read on every hand
The open books Dame Nature leads
To that same Knowledge Land.

He serves all who dares be true.
—R. W. Emerson.

A Bible Lesson

Sunday-school Teacher: Now, Harry, what do you learn from the parable of the prodigal son?

Harry—That it is better to be a prodigal son than a fatted calf.—Detroit News.

A Close Up View of Some of Our Folks



MAULE BOYS WITH YOK OF CALVES
LANCASTER CO., PA.



A COLUMBIA CO. SCENE



N.C. MAULE, LANC. CO., HAS THREE
SONS FOR PARTNERS



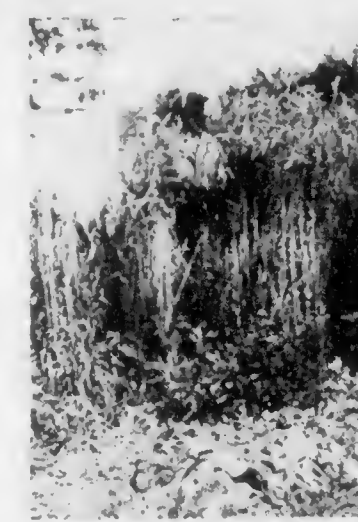
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THE MAY DUCKWHEAT GROWS IN INDIANA COUNTY PA.



MISS SINES WITH PET CALF
ATLANTIC CO., N.J.

The Voice of the Pack

by Edison Marshall



SYNOPSIS

Dan Failing had just received from his physician the unwelcome information that he had but six months to live. Altho descended from a long line of hardy pioneers, his life had been spent in the city where confinement in an office had destroyed the physical foundation which his forefathers had laid. He crawled out to the city park, seated himself on a bench where he made the acquaintance of a squirrel. The squirrel's antics awoke a latent love and appreciation for the things of Nature and he suddenly resolved to spend his last six months in the forests of the Northwest where his grandfather had lived. He acts at once upon this resolve and he is soon in the virgin forests of that great country. He is fortunate in becoming an inmate of a home owned by a man who knew and loved Dan's grandfather. A daughter, nicknamed Snowbird, is also a member of the family.

(Continued From Last Week)
CHAPTER IV

THE long night was almost done when Whisperfoot even got sight of further game. Once a flock of grouse exploded with a roar of wings from a thicket; but they had been awakened by the first whisper of dawn in the wind, and he really had no chance at them. Soon after this, the moon set.

The larger creatures of the forest are almost as helpless in absolute darkness as human beings. It is very well to talk of seeing in the dark, but from the nature of things, even vertical pupils may only respond to light. No owl or bat can see in absolute darkness. Altho the stars still burned, and possibly a fine filament of light had spread out from the east, the descending moon left the forest much too dark for Whisperfoot to hunt with any advantage. It became increasingly likely that he would have to retire to his lair without any meal whatever.

But still he remained, hoping against hope. After a futile fifteen minutes of watching a trail, he heard a doe feeding on a hillside. Its footfall was not so heavy as the sturdy tramp of a buck, and besides, the bucks would be higher on the ridges this time of morning. He began a cautious advance toward it.

For the first fifty yards the hunt was in his favor. He came up wind, and the brush made a perfect cover. The doe unfortunately was standing a full twenty yards farther, in an open glade. For a long moment the tawny creature stood motionless, hoping that the prey would wander toward him. But even in this darkness, he could tell that she was making a half-circle that would miss him by forty yards, a course that would eventually take her down wind in almost the direction that Whisperfoot had come.

Under ordinary circumstances Whisperfoot would not have made an attack. A cougar can run swiftly, but a deer is light itself. The big cat would have preferred to linger, a motionless thing in the thickets, hoping some other member of the deer herd to which the doe must have belonged would come into his ambush. But the hunt was late, and Whisperfoot was very angry. Too

many times this night he had missed his kill. Besides, the herd was certainly somewhere down wind, and for certain very important reasons a cougar might as well hunt elephants as try to stalk down wind. The breeze carries his scent more surely than a serant carries a visiting card. In desperation he leaped from the thicket and charged the deer.

In spite of the preponderant odds against him, the charge was almost a success. He went fully half the distance between them before the deer perceived him. Then she leaped. There seemed to be no interlude of time between the instant that she beheld the dim, tawny figure in the air and that in which her long legs pushed out in a spring. But she did not leap straight ahead. She knew enough of the cougars to know that the great cat would certainly aim for her head and neck in the same way that a duck-hunter leads a fast-flying duck—hoping to intercept her leap. Even as her feet left the ground she seemed to whirl in the air, and the deadly talons whipped down in vain. Then, cutting back in front, she raced down wind.

It is usually the most unmitigated folly for a cougar to chase a deer against which he has missed his stroke; and it is also quite fatal to his dignity. And whoever doubts for a minute that the larger creatures have no dignity, and that it is not very dear to them, simply knows nothing about the ways of animals. They cling to it to the death. And nothing is quite so amusing to old Wolf, the bear—who, after all, has the best sense of humor in the forest—as the sight of a tawny, majestic mountain lion, rabid and foaming at the mouth, in an effort to chase a deer that he can't possibly catch. But tonight it was too dark for Wolf to see. Besides, one disappointment after another had crumbled, as the rains crumble leaves, the last vestige of Whisperfoot's self-control. Snarling, he bounded after the doe.

She was lost to sight at once in the darkness, but for fully thirty yards he raced in her pursuit. And it is true that deep down in his own well of instincts—those mysterious waters that the events of life can hardly trouble—he really didn't expect to overtake her. If he had stopped to think, it would have been one of the really great surprises of his life to hear the sudden, unmistakable stir and movement of a large, living creature not fifteen feet distant in the thicket.

He didn't stop to think at all. He didn't puzzle on the extreme unlikelihood of a doe halting in her flight from a cougar. It is doubtful whether, in the thickets, he had any perceptions of the creature other than its movements. He was running down wind, so it is certain that he didn't smell it. If he saw it at all, it was just as a shadow, sufficiently large to be that of a deer. It was moving, crawling as Wolf sometimes crawled, seemingly to get out of his path. And Whisperfoot leaped straight at it.

It was a perfect shot. He landed

high on its shoulders. His head lashed down, and the white teeth closed. All the long life of his race he had known that pungent essence that flowed forth. His senses perceived it, a message shot along his nerves to his brain. And then he opened his mouth in a high, far-carrying squeal of utter, abject terror.

He sprang a full fifteen feet back into the thickets; then crouched. The hair stood still at his shoulders, his claws were bared; he was prepared to fight to the death. He didn't understand. He only knew the worst single terror of his life. It was not a doe that he had attacked in the darkness. It was not Urson, the porcupine, or even Wolf. It was that imperial master of all things, man himself. Unknowingly, he had attacked Landy Hildreth, lying wounded from Cranston's bullet beside the trail. Word of the arson ring would never reach the settlements, after all.

And as for Whisperfoot—the terror that choked his heart with blood began to wear off in a little while. The man lay so still in the thickets. Besides, there was a strange, wild smell in the air. Whisperfoot's stroke had gone home so true there had not even been a fight. The darkness began to lift around him, and a strange exultation, a rapture unknown before in all his hunting, began to creep into his wild blood. Then, as a shadow steals, he went creeping back to his den.

CHAPTER V

Dan Failing had been studying nature on the high ridges; and he went home by a back trail that led to old Bald Mountain. Many a man of longer residence in the mountains would not have cared to strike off thru the thickets with no guide except his own sense of direction. The ridges are too many, and they look too much alike. It is very easy to walk in a great circle—because one leg tires before the other—with no hope whatever of anything except the spirit ever rising above the barrier of the pines. But Dan always knew exactly where he was. It was part of his inheritance from his frontiersmen ancestors, and it freed his wings in the hills.

The trail was just a narrow serpent in the brush; and it had not been made by gangs of laborers, working with shovels and picks. Possibly half a dozen white men, in all, had ever walked along it. It was just the path of the wild creatures, worn down by hoof and paw and cushion since the young days of the world.

It was covered like a sheep lane, with little slit triangles in the yellow dirt. Some of them were hardly larger than the print of a man's thumb, and they went all the way up to a great imprint that Dan could scarcely cover with his open hand. All manner of deer, from seasonal fawns with spotted coats and wide, startled eyes, to the great bull elk, monarch of the forest, had passed that way before him. Once he found the traces of an old kill, where a cougar had dined and from which the buzzards had but newly departed. And once he saw where Wolf had left his challenge in the bark of a great pine.

This is a very common thing for Wolf to do—to go about leaving challenges as if he were the most warlike creature in the world. In the trying hour he had come to realize, he never fights until he is driven to it, and then his big, furry arms turn out to be steel compressors of the first order; he is patient

and good-natured and ordinarily all he wants to do is sleep in the leaves and grunt and soliloquize and hunt berries. But woe to the man or beast who meets him in a rough-and-tumble fight. Unlike his great cousin the Grizzly, that American Adamzad that not only walks like a man but kills cattle like a butcher, he almost never eats meat. No one ever pays any attention to his challenges either, and likely he never thought any one would. They seemed to be the result of an inherited tendency with him, just as much as to grow drowsy in winter, or to scratch fleas from his furry hide.

He sees a tree that suits his fancy and immediately stands on his hind legs beside it. Then he scratches the bark, just as high up as he can reach. The idea seemed to be that if any other bear should journey along that way, should find that he couldn't reach as high, he would immediately quit the territory. But it doesn't work out in practice. Nine times out of ten there will be a dozen

WooFs in the same neighborhood, no two of equal size, yet they hunt their berries and rob their bee trees in perfect peace. Perhaps the impulse still remains, a dim, remembered instinct, long after it has outlived its usefulness—just as man, ten thousand years after his arboreal existence, will often throw his arms into the air as if to seize a tree branch when he is badly frightened.

It was a roundabout trail home, but yet it had its advantages. It took him within two miles of Snowbird's lookout station, and at this hour of day he had been particularly fortunate in finding her at a certain spring on the mountain side. It was a rather singular coincidence. Along about four he would usually find himself wandering up that way. Strange enough, at the same time, it was true that she had an irresistible impulse to go down and sit in the green ferns beside the same spring. They always seemed to be surprised to see one another. In reality, either of them would have been considerably more surprised had the other failed to put in an appearance. And always they had long talks, as the afternoon drew to twilight.

"But I don't think you ought to wait so late before starting home," the girl would always say. "You're not a human hawk, and it is easier to get lost than you think."

And this solicitude, Dan rightly figured, was a good sign. There was only one objection to it. It resulted in an unmistakable inference that she considered him unable to take care of himself—and that was the last thing on earth that he wanted her to think. He understood her well enough to know that her standards were the standards of the mountains, valuing strength and self-reliance above all things. He didn't stop to question why, every day, he trod so many weary miles to be with her.

She was as natural as a fawn; and many times she had quite taken away his breath. And once she did it literally. He didn't think that so long as death spared him he would ever be able to forget that experience. It was her birthday, and knowing of it in time he had arranged for the delivery of a certain package, dear to a girlish heart, at her father's house.

In the trying hour he had come to realize, he never fights until he is driven to it, and then his big, furry arms turn out to be steel compressors of the first order; he is patient

and good-natured and ordinarily all he wants to do is sleep in the leaves and grunt and soliloquize and hunt berries. But woe to the man or beast who meets him in a rough-and-tumble fight. Unlike his great cousin the Grizzly, that American Adamzad that not only walks like a man but kills cattle like a butcher, he almost never eats meat. No one ever pays any attention to his challenges either, and likely he never thought any one would. They seemed to be the result of an inherited tendency with him, just as much as to grow drowsy in winter, or to scratch fleas from his furry hide.

A Story for Children

The Bunnies' Surprise Party

red, as she took off its wrapping paper. It was a jolly old gift, he recollected. And when she had seen it, she fairly leaped at him. Her warm, round arms around his neck, and the softest, loveliest lips in the world pressed his. But in those days he didn't have the strength that he had now. He felt he could endure the same experience again with no embarrassment whatever. His first impression then, besides abounding, incredible astonishment, was that she had quite knocked out his breath. But let it be said for him that he recovered with notable promptness. His own arms had gone up and closed around—and the girl had wriggled free.

"But you mustn't do that!" she told him.

"But, good Lord, girl! You did it to me! Is there no justice in women?"

"But I did it to thank you for this lovely gift. For remembering me—for being so good—and considerate. You haven't any cause to thank me."

He had many very serious difficulties in thinking it out. And only one conclusion was obtainable—that snowbird kissed as naturally as she did anything else, and the kiss meant exactly what she said it did and no more. But the fact remained that he would have walked a good many miles farther if he thought there was any possibility of a repeat.

But all at once his fantasies were suddenly and rudely dispelled by the intrusion of realities. Even a man in the depths of concentration cannot be inattentive to the wild sounds of the mountains. They have a commanding, a penetrating quality all their own. A mathematician cannot walk over a mountain trail pondering on the fourth dimension when some living creature is consistently cracking brush in the thickets beside him. Human nature is directly opposed to such a thing, and it is too much to expect of any man. He has too many memories of saber-tooth tigers, springing from their lairs, and likely he has heard too many bear stories in his youth.

Dan had been walking silently himself in the pine needles. As Lennox had wondered at long ago, he knew how by instinct, and instinctively he practiced this attainment as soon as he got out into the wild. The creature was fully one hundred yards distant, yet Dan could hear him with entire plainness. And for a while he couldn't even guess what manner of thing it might be.

A cougar that made so much noise would be immediately expelled from the union. A wolf pack, running by night, might crack brush as freely; but a wolf pack would also bay to wake the dead. Of course it might be an elk or a steer, and still more likely, a bear. He stood still and listened. The sound grew nearer.

Soon it became evident that the creature was either walking with two legs, or else was a four-footed animal putting two feet down at a time. Dan had learned to wait. He stood perfectly still. And gradually he came to the conclusion that he was listening to the footfall of another man.

But it was rather hard to imagine what a man might be doing on this lonely hill. Of course it might be a deer hunter; but few were the valiant sportsmen who had penetrated to this far land. The footfall was much too heavy for Snowbird. The steps were evidently on another trail that intersected his own trail one hundred yards farther up the hill. He had only to stand still, and in an instant the man would come in sight.

He took one step into the thickets, prepared to conceal himself if it became necessary. Then he waited. Soon the man stepped out on the trail.

Even at the distance of one hundred yards, Dan had no difficulty whatever in recognizing him. He could not mistake this tall, dark form, the soiled, slouchy clothes, the rough hair, the intent, dark features. It was a man about his own age, his own height, but weighing fully twenty pounds more, and the dark, narrow eyes could belong to do one but Bert Cranston. He carried his rifle loosely in his arms.

He stopped at the forks in the trail and looked carefully in all directions. Dan had every reason to think that Cranston would see him at first glance. Only one clump of thickets sheltered him. But because Dan had learned the lesson of standing still, because his olive-drab sporting clothes blended softly with the colored leaves, Cranston did not detect him. He turned and strode on down the trail.

He didn't move quite like a man with innocent purposes. There was something stealthy, something sinister in his stride, and the way he kept such a sharp lookout in all directions. Yet he never glanced to the trail for deer tracks, as he would have done had he been hunting. Without ever waiting to meditate on the matter, Dan started to shadow him.

Before one hundred yards had been traveled, he could better understand the joy the cougar takes in his hunting. It was the same process—a cautious, silent advance in the trail of prey. He had to walk with the same caution, he had to take advantage of the thickets. He began to feel a curious excitement.

Cranston seemed to be moving more carefully now, examining the brush along the trail. Now and then he glanced up at the tree tops. And all at once he stopped and knelt in the dry shrubbery.

At first all that Dan could see was the glitter of a knife blade.

Cranston seemed to be whittling a piece of dead pine into fine shavings. Now he was gathering pine needles and making a little pile of them. And then, just as Cranston drew his match, Dan saw his purpose.

Cranston was at his old trade—setting a forest fire.

(Continued Next Week.)

HIS FOND FAREWELL

A Frenchman, guest at a London hotel, had just been presented with his bill. Though he paid it without formal protest, he was most indignant at its amount.

"I wish to see ze proprietor!" he exclaimed to the clerk.

In a moment the proprietor entered.

The Frenchman was all smiles. "Ah!" he exclaimed, "I must embrace you!"

"But why should you wish to embrace me, sir?" asked the astonished hotelkeeper. "I do not understand."

"Look at zees bill."

"Yes, your receipted bill. What of it?"

"What of it? Simple zees, saire, it means zat I shall nevaire, no nevaire, see you again."

The Result

Ethel—I suppose Jack has at least acquired some polish by this time.

May—He should have. Since prohibition he's been drinking nothing but liquid veneer.—Lafayette Lyre.

THE two little Bunnies, Fisky and Snippy, were twins, and it was their birthday. They thought of that as soon as they opened their eyes in the morning. The sun-peeping in at the window told them it was a wonderful day, and the gentle breezes called them to come out and play. "Oh, Fisky," whispered Snippy, "this is our birthday. Let's celebrate all by ourselves. I know where there is the nicest garden, with radishes, lettuce and all sorts of good things to eat."

"Yes—yes, let's," agreed Fisky. "But we mustn't let Mother see what we are up to for you know she does not allow us to go into a garden alone. She said that people eat us and if they see us in their gardens, they want to catch us more than ever."

"What do we care, this is our birthday," cried Snippy. "Let's hurry." So they jumped up out of bed and dressed quickly. As they ate their breakfast, their Mother hustled around the kitchen with a happy smile on her face. Fisky and Snippy wondered why she looked so happy but they were so busy thinking of themselves that they soon forgot to watch her. As they finished eating their crisp lettuce leaves, Mother Bunny said:

"Now, children, fly around and help Mother fix up the house and then maybe something nice will happen."

The two little Bunnies wiggled their ears at each other knowingly and started to work hard, and then when their Mother had her back turned, they both ran out the door and thru the woods until they came to Farmer Wilson's garden. Silently they crept into it and looked around. There was no one in sight, so they

started to play a game of tag. Suddenly Snippy spied a patch of cabbage leaves.

"Oh, Fisky, look at those nice cabbage leaves. Let's see who can eat the most." The race started and they were so busy eating that they did not hear heavy footsteps coming along the garden path.

"Snippy, I can't eat another bite, I feel so—Sh-sh! look!"

Stealing up behind them was Farmer Wilson with a hoe in his hand. Both Bunnies started to run and they did not stop until they dropped with exhaustion on a pile of grass far from the garden. When they could start on again, lo! and behold, they found that they had run in the opposite direction from home. Wearily they started homeward, wondering what would happen when they got there for they knew they had been very naughty.

About sundown, they were trudging slowly up the path in front of their house. Mother Bunny was standing in the doorway, weeping. Lots and lots of other bunnies were playing games in the front yard.

"Oh, my poor children, where have you been?" cried the poor, worried mother as she gathered them into her arms. I've been so frightened and you've missed the lovely surprise party I had for you."

The two runaway Bunnies looked at each other and then burst into tears for both felt sick, besides being disappointed.

Mother Bunny was so glad to see them safely home that she could not scold. But Father Bunny knew what they needed, so even though it was their birthday, he whipped them soundly, and put them to bed. Never again did they risk running away, especially on anyone's birthday.—L. M. K.

OLD HOUSES

The gray old houses are hooded women, peering from shapely tumbled bunnets of garrets hanging away. The gray old houses dream that they are hearing voices of their children in the years gone by!

With dim glazed eyes of windows, they are staring, thinking of a father when broken was his pride; And while their brood, they wonder where are faring.

The boys that kissed and the girls that cried. What old secrets here often pry and fumble? What old ghosts hurry to and fro?—Ghosts of Desires that poke about and mumble. Of hot-headed Yoes that fretted long ago.

What Tates and what Ranceuses are driving and are dreaming About the broken hearth, within the misty glen? What stories of loving and quarreling and scheming Huddle with their memories to crowd each room?

So, hushed, they stand, like hooded women peering—

These worn out houses that always dream and sigh; And like old mothers, they brood and stare at hearing Voices that vanished in the years gone by!

VERY GOOD, EDDIE

Eddie had but half an hour in which to finish up the composition on Henry VIII, on which he was engaged. Eddie's treatment of that great man was vivid, but hardly historic. He wrote:

"Henry VIII was a King of England and the greatest widower that ever was. He was born at a place called Anne Domini and he had sixty wives. The first he ordered to be executed, but she was beheaded. He revoked the second, and the third died; and then he married Annie Bowling, the daughter of Tom Bowling. When he died he was succeeded on the throne by his Aunt Mary. Her full name was Mary Queen of Scots, or the Lay of the Last Minstrel."

Faint Heart

Doris—I thought you were going to kiss me when you puckered up your lips just now.

Jack—No—er—it was only a piece of grit in my mouth.

Doris—Then, for goodness sake, swallow it—you need some!—Edinburg Scotsman.

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Health Training in N. Y. State

THRU some mistake, the law governing health education in the public schools of New York received the name physical training instead of health training, as our instructor in the subject gives its rightful name. Following the details of this measure, one can readily see its direct bearing on the health of the school child.

Morning inspection and report is helping to form good health habits in the younger generation—something we teachers, at least, appreciate as we see the effect it has on the personal appearance of our charges. The scope of this Health Club work is suggested to even the casual visitor in many a school this year by a large square of cardboard in a conspicuous place on the wall. Across the top of this "home-made" chart are five pictures, evidently cut from magazine advertisements. The first picture on one such chart showing a tooth brush and a package of dentifrice; the second, a hand with well-groomed finger nails; the next, a girl washing her face; the fourth a girl brushing her hair; and the last a little child in a bathtub evidently enjoying a bath. Below this interesting and suggestive series of pictures is printed "Health Chart" and a list of the pupil's names. The stars or figures following these names below each day's record on five important health practices.

For some time, thoughtful teachers have seen the need of supervising the recreation periods of their pupils. Now, physical training decrees that the teacher shall supervise the playground, and, more important than all, provides that she be taught suitable games to encourage her charges to healthful play.

Physical training further provides suggestions in regard to hot lunches for those children who would otherwise bolt a cold lunch or go hungry till night. In some places this recommendation has been worked out on a co-operative plan, the parents in turn contributing material for soups, stews and the like. In other schools of my acquaintance the children take their individual portions and heat them separately on the stove in time for dinner. Specialists in dietetics tell us that this hot food helps the digestion of the rest of the meal. I know it compels the boys and girls to eat more slowly, which is certainly another good health habit for young Americans.

In rural communities, particularly, one hears a great deal about the setting-up drills, both for and against, still the amount of so-called military training that an average child gets in four two-minute periods daily would certainly do him no harm. Of course everyone should understand that cripples and those temporarily incapacitated are excused from this exercise. It is valuable to train the child to control his body, to allow fresh air into the schoolroom (and what country schoolroom does not need some?) and to give the change of position so often needed by children who have long study periods and short recitation periods. In these respects I think the country school needs setting up drills more than the city school where proper provision is made for ventilating the room and for the self-activity of the pupils.

The physical training conferences which every rural teacher must attend for a day once in five or six weeks have been a great help to us teachers who finished our teacher-

training courses before the advent of Health Training. We have been taught some of the theory and many of the methods of presenting this work to our schools. If any teacher has tired herself out at our conferences, it was not the fault of the system or of the instructor, as our instructors have always been willing to excuse from exercise any who felt unable to take part.

Altogether, it seems to me that physical training has been and continues to be very beneficial to both teachers and pupils. I am glad to know of the possibility—and more, the probability—of a national law similar to the one now in force in New York state.—Vida M. Bates.

AGAINST CONSOLIDATION

In a recent issue of your paper, you publish an extract from one of Dr. Finegan's speeches, on consolidated schools. I wish to say I think consolidated schools alright if the law also could read that the child farthest from school should have equal privilege with the child who lives nearer. But when those farthest away must walk in all kinds of weather one and a half miles to where a rig starts, I can see nothing fair about it.

Perhaps, as Dr. Finegan remarks, we rural people are ignorant about this matter, yet as a mother of three small children, aged respectively, 7, 9 and 11 years, who are obliged to arise at 5.30 A. M. each morning, eat breakfast and be at the starting place at 7.30 in order to keep warm for the three miles which they must ride from there to the school, I wish to say I think it a great injustice.

I think this law either due to ignorance of rural conditions or lack of gray matter. My boys feel the injustice very keenly. When they must wade snow banks and nearly freeze to get where the rig starts, and the other fellow's child just walk out and climb in a warm rig, right at the door. Our school directors frankly admitted they would not want a child of theirs to do it.

Last year the rig came for the children and would this year for just a small amount more than the township is now paying.

I presume one farmer pays just as much tax, accordingly, as another, yet there is a vast difference in school accommodations. As far as I can see the farmer distant from school is going to be obliged to seek a city job, in order to have his children attend school regularly. Last year my boys were out only two days each. This year, they have been out three times as much and in all probability will be out more as the weather gets colder, as they are so small to leave home before daylight with the thermometer 30 below zero and snow two or three feet deep.—E. A. W., Tioga Co., Pa.

Research Suggested

"Is kissing really dangerous," asked the girl.
"Well, I don't know that the question has ever been settled," answered the young man. "Why not take up a little scientific research along those lines?"—Louisville Courier-Journal.

Kid—How dare you! No! I never kissed a man in my life! Kidder—Aw, don't get so stuck up about it, I never did either.—Carnegie Puppet.

COUNTY NOTE

Union County, Pa.—A few inches of snow fell on the 14th which makes a needed covering for wheat, and is making sledding. The county fair for 1921 was held on Oct. 11-14, and C. M. Renner was elected secretary to take C. Dalé Wolfe's place, after serving 26 years continuously.

The Farmers' Exchange of Mifflinburg elected a board of directors on the first of this month, and they have built a new elevator, complete in every respect, and are about ready to deal in coal, grain, feed and fertilizer on a large scale. They have a capital of \$50,000. No grain of any account has been marketed lately, as farmers are waiting for \$2 wheat, and a little better price for corn, for which there is no sale now.

The county superintendent of schools visited schools, with the directors of Buffalo township, four days last week. Hartley township used to employ 10 teachers, but there are only four open this winter, as the pupils from five schools are hauled to Laurelton where they have a consolidated school of four grades and four teachers, and there are only three ungraded schools open.

Many farm buildings were rodded in the county last summer as a protection against lightning. Poultrymen are getting ready to start their incubators to hatch chicks. Western horses are being shipped into the county already, and public farm sales will begin the middle of February.—J. N. Glover.

ITALIANS AS LANCASTER CO., PA. FARMERS

Among the farmers of Lancaster County, Pa., several nationalities are represented besides the native American, the Irishman, the German and the Italian are all here and are holding up their end very well. The writer recently came in contact with a few of the sons of Italy who have taken to the soil of Lancaster County for a livelihood and made good.

John Plastino came to Lancaster County to work for the John Shields Construction Co., while the Atglen & Susquehanna Railroad was under construction and after its completion some 15 years ago, he purchased a farm four miles east of Quarryville which he operated until three years ago when he retired, having rented his farm to a native American on the shares and is now living retired and abundantly to do so. He is frequently seen on the streets of Quarryville in his automobile, yet not infrequently you may find him behind a well-tied steed. He was an all-around farmer but seemed to be especially successful in growing cabbage and tobacco and has hauled more tons of cabbage per acre to Quarryville for shipment than any farmer in his locality, and delivered at Quarryville some of the best tobacco as to quality and weight per acre grown in this section.

Alexander Distifano came to Lancaster city about thirty years ago. Six years ago he purchased a farm near Hollywood and has lived thereon ever since. His neighbors say the first thing he did was to clean it up and has kept it clean ever since. Everything about the place shows evidence of good care and in the garage you will find a big touring car, and in the parlor a costly player-piano.

These men are good citizens and Alex. Distifano furnished Uncle Sam with a loyal soldier boy who saw service in France.—J. B. M., Quarryville, Lane Co., Pa.

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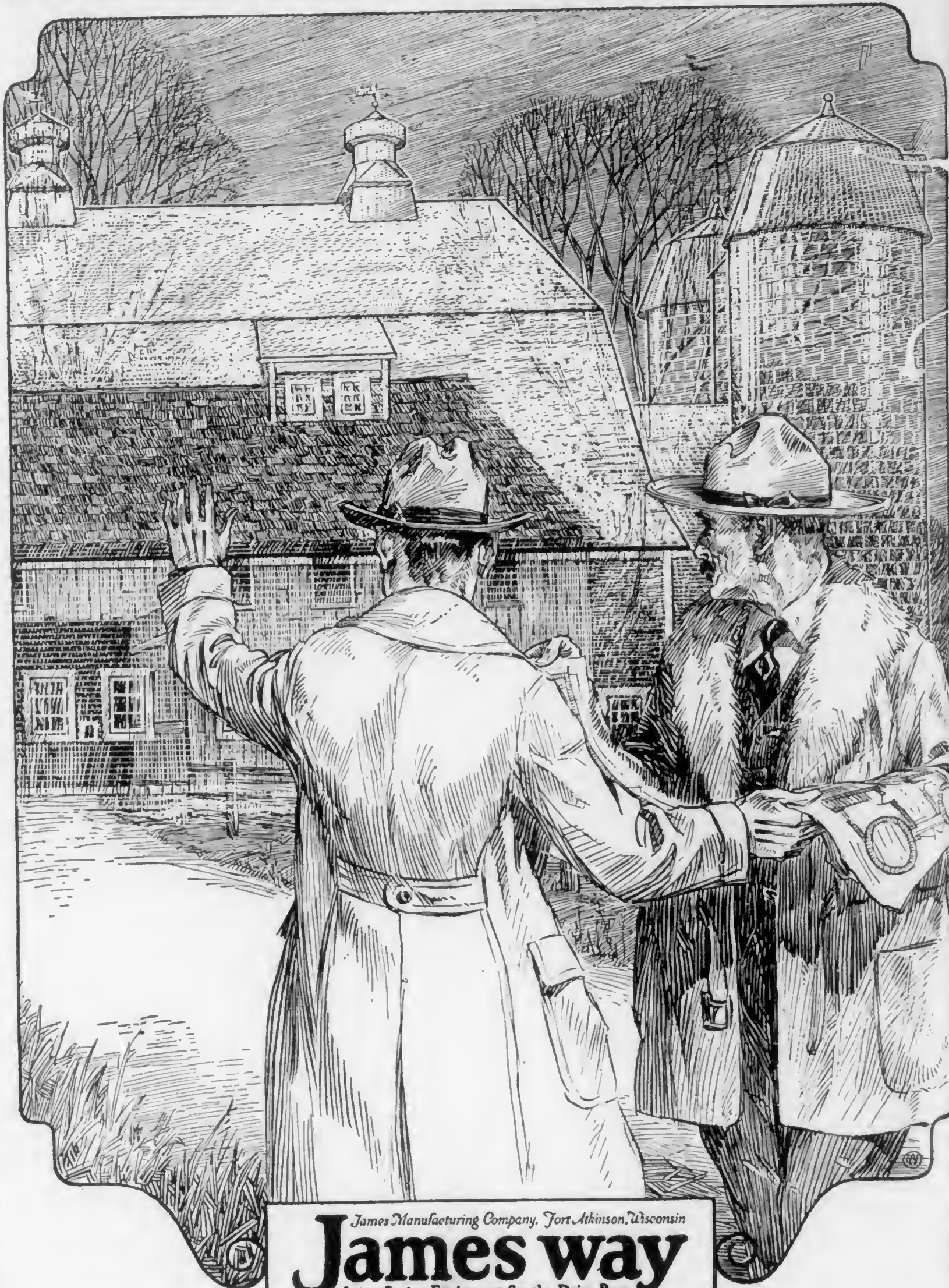
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Volume 49



Care and Use of Farm Machinery

By F. A. WIRT

Member, Amer. Soc. Agricultural Engineers.

THOUSANDS of dollars can be saved in 1921 by the farmers, collectively, of the Pennsylvania Farmer by following the suggestions made in a series of articles beginning in this issue on "Care, Management and Use of Farm Machinery" and "A Penny Saved is a Penny Earned."

Reduced operating expense is one sure way to increase the net income from farming and with future prices of farm products uncertain any method of decreasing cost of production is of vital importance. Hardly a farmer but can make a big saving each year in the use of farm machinery by systematic planning and intelligent execution, remembering always that such ideas as "it can't be done" must be forgotten.

If the significant importance of farm machinery to present-day agriculture was thoroughly appreciated and acted upon, an immense saving in time which is money, in crops, in labor, in convenience, and in all-around effectiveness, would result. But best of all that profitable result can be had in a large measure in 1921.

The suggestions made in this series of articles are not startling nor surprising. There is no easy road to cheaper use of farm machinery. It will require intelligent application to methods reasonably easy to put into effect provided that the real importance of farm machinery is appreciated and acted upon.

To farm machinery and its use the American farmer owes his enviable reputation for greatest yield per man. As an example of conditions where farm machinery is not used reference might be made to farming in China. Despite the fact that so much credit belongs to proper using of farm machinery without which farming would be a sorry lot, indeed, much is still to be learned before reasonably effective use is made of the implements now on the market and in the hands of the users.

The writer is reminded here of a good farmer he visited about two years ago to obtain his experiences with a side delivery rake and hay loader. Many years ago when side delivery rakes and hay loaders were first really pushed in that county he bought an outfit and has been using it ever since. Today, this farmer receives a premium of \$2 to \$4 a ton above the prevailing price in that section for all of the hay he can spare. He was justly proud in showing the writer the hay he had in his barn. Bright, clean, and refreshingly green hay was seen. The nutrient of this premium hay had not been destroyed by sun-burning and lost leaves. Hay buyers who offered and paid this extra price knew a good thing when they saw it.

To the writer's surprise only one of his neighbors used the similar equipment and then only after years of persuasion. In reply to a question this farmer gave his explanation of why his neighbors did not use the same equipment.

"When I bought my side delivery rake and hay loader years ago several of my neighbors did likewise and then almost immediately they gave up using this valuable equipment because it worked too hard the men on the hay rack. Now when we are loading in the field if the hay is too heavy and threatens to cover up the man on the rack we will stop and clear away the accumulation and then drive on. They really put up their hay the harder way, have a poorer quality and get less for it. I wouldn't do without a side delivery rake and loader for double the cost."

For considerations less reasonable than the above many machines have a bad reputation in certain sections. Perhaps one or two machines some years ago or only recently failed to work as the purchaser expected and as a result the machines have a bad reputation when, perhaps, the trouble was only a wrong adjustment, improper use, or unreasonable expectation.

Last spring the writer visited a farmer in a hilly and stony section and to his amazement saw a two-row cultivator at work in the corn field. In that section two-row cultivators are scarce, very scarce.

A look at the work done was enough to con-

vince the most skeptical that excellent work is possible with a 2-row cultivator even in rolling and stony fields if the planting is done with a corn planter and the same rows followed in cultivating.

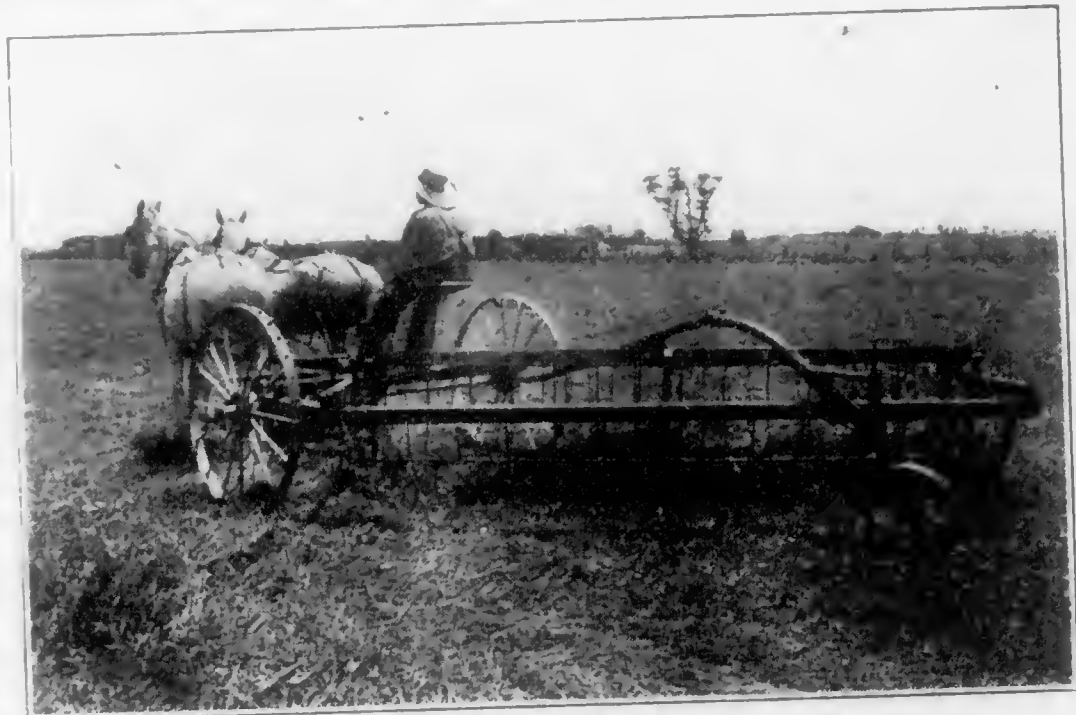
"Yes," said this farmer, "my neighbors laughed at me for buying a two-row cultivator. They still use walking cultivators to quite an extent and considered a 2-row cultivator out of the question but I wouldn't do without it as we can cultivate just as well and can cover from 15 to 18 acres a day."

Just last week the writer learned of a farmer who a few years ago bought a new grain binder every two or three years yet he cut not over 40 acres a year. Such use of farm machinery is expensive and entirely unnecessary but it only goes to prove that much can be done to obtain really effective and efficient use of farm machinery.

Proper care, management and use of farm machinery will reduce the cost of using farm implements.

THE CAUSE OF POTATO BLIGHT AND DRY ROT

Potato blight and its accompanying dry rot is a disease that has long been known to potato growers for its destructiveness both in the field and in storage. The great famine in Ireland in



A Side Delivery Rake Makes Hay Loading Easier

1845 was largely due to the failure of the potato crop caused by late blight, but still many farmers of Eastern Pennsylvania, New Jersey and Delaware are discussing the cause of dry rot in this year's fall crop, as if the disease is a new one to this region, little knowing the true nature of the trouble.

Dry rot does not spring up over night like a plague, but has its beginning in the early spring. When the farmer selects his tubers for planting, a slightly affected tuber may be overlooked and in this way the disease is carried over from the fall to the spring crop, for as soon as the seed piece begins to sprout the diseased threads or mycelium keep pace with the growth of the sprout, and the disease finally makes its appearance on the leaves as definite spots, which are all together different from other potato troubles. The spots usually appear at the edges or tips of the leaves, spreading under favorable weather conditions, until the whole leaf is diseased. The leaf then becomes dark and appears to be damp and water soaked, with often a mouldy growth covering its surface. It is from this mouldy growth that the disease germs arise in great numbers, inoculating leaf after leaf until the whole field may be affected in a very short time. The germs also fall upon the ground, penetrate the soil until they reach the tender skins of the new tubers, and as a result dry rot sets in.

Dry rot is not only a field disease, but may become a severe storage disease as well. The moist atmosphere of a storage cellar favors the growth of the fungus organism and soon an inconspicuous spot begins to increase in size until the whole surface of the tuber is diseased by de-

structive soft rots which cause complete decay. Fortunately, the disease can be controlled by planting carefully selected seed stock from fields which do not show leaf blight or tuber infection, and by spraying with a good copper fungicide.

Spraying is practiced for plant protection and should, in order to be effective, start long before any infection appears on the leaves. In other words, start when the plants are five or six inches high and keep up the application every ten days for the next eight weeks. Two types of a spray material may be used, either 4-4-50 Bordeaux mixture or a good commercial spray. Home made Bordeaux has the advantage of being slightly cheaper, but very often is poorly mixed when made by persons not familiar with the process.

Commercial copper sprays on the other hand are slightly higher in cost, but have the value of being practically constant in strength and are great time-savers, especially when only small areas are to be sprayed. No matter what the fungicide, spraying will not be a success unless carefully done and put on with a pressure equalling at least 100 lbs.—J. M. LeCato, Delaware.

GOOD LOCATION A GOOD INVESTMENT

A shrewd business farmer, who bought a farm near a flourishing town at what seemed an exorbitant price, against the wishes of his relatives who pointed out that a much better piece of land back off the road could be had for less money, proved the wisdom of his investment even to the most skeptical in a few years. "The location has been worth the fifty dollars more per acre that I paid for it," he said many times. "I have gotten that back and more besides, and I have now a more salable piece of property than if I had bought on the mud road and had better crops on that land."

First of all he counted that his children and his family had received a direct money benefit from close proximity to town that meant much to any farmer. While other parents were boarding their sons and daughters in town, or letting them do light housekeeping, his children were walking to high school in good weather and going in the auto over the good road when it was stormy. The cost of keeping two children in light housekeeping rooms, and with no supervision, he found was fifteen dollars per month while boarding was four times that amount. They were able to take in educational entertainments as well as those who boarded in town, attend church services on Sunday and have a share in the high school fun as well as in the studies at small cost.

The fertilizer hauled from town the first year he owned the farm was worth to him two hundred dollars so he added that to the profit of the location. Getting his cream to market without paying for having it hauled was another item, and being able to haul twice as much on the fine roadbed as on the dirt road still another financial consideration. A home market for surplus fruits and vegetables brought in fancy prices for all the produce that could be spared for automobilists bought eagerly the good things off the farm.

But more than all his family was contented and the bustle and life of the highway satisfied demand of the boys and girls for "something doing" day by day. The boys and girls established a wayside market and made their own pocket money, while the mistress of the house found that with a chicken tight fence all the complaints of reckless drivers killing off young chickens were groundless. When the work was ended it was possible to sit on the porch and see things whereas a farm on a back road is deadly dull in leisure hours.

While, of course, location will not raise crops and redeem poor clay soil, still it means more than the average farmer who has had little experience realizes. Forty or fifty dollars more per acre for land in a good location may look expensive but pays in a way of its own.—H. Richmond.



Soils and Fertilizers

Conducted by Dr. J. G. Lipman

Our readers are invited to send us their problems on soils and fertilizers and they will be answered by Dr. Lipman in this column.

THE FERTILIZER SITUATION

THE effect of the general decline in the prices of commodities is now being felt strongly in the fertilizer trade. The raw materials that enter into the manufacture of mixed fertilizers, such as acid phosphate, sulfate of ammonia, nitrate of soda, tankage, fish, cottonseed meal and potash salts, are all much cheaper now than they were last spring. This fact is recognized by the farmers and they are expecting that they should have the advantage of buying fertilizer for much less money than they paid for it last year. They argue that the crops of 1920 were made with high-priced labor, high-priced seed, high-priced fertilizer and high-priced farm machinery, but, when their crops were ready to market, they had to sell these on a declining market and often at a very serious loss to themselves. Hence, they feel that the fertilizer manufacturers should share with them these losses and should surely not expect them to pay relatively high prices for mixed goods not knowing what the prices of farm crops this year may be.

The fertilizer manufacturers, on their part, have considerable quantities of manufactured goods on hand. Some of these were made from materials bought when prices were still high, when labor was high and general expenses also high in proportion. They claim that any material reductions on goods already manufactured and on hand would cut off considerable losses to them. They are inclined to insist on the schedule of prices already adopted. There is thus a sort of deadlock between the farmers, and the manufacturers of mixed fertilizers. The farmers are refraining from buying and are quite strong in their declaration that they would rather reduce the acreage and get along with less fertilizer than buy the high-priced goods and take all the chances of growing their crops for an uncertain market. The situation is evidently a very unfortunate one, for any large reduction in the use of fertilizers would also mean a large reduction in yields and consequently smaller supplies of food for the consumers. It is evident, also, that where yields per acre are relatively low the unit cost of producing the crop is relatively high. But, after all is said and done, one need not be at all biased in expressing the opinion that the manufacturers of fertilizers are not following a far-sighted policy in insisting on schedules that are not based on replacement values. For the sake of the good-will of their customers, they should make the utmost concessions and shoulder the burden of shrinking values as has already been done by the farmers.

The fertilizer market presents today some

rather curious features. Only as recently as last spring the optimists among the importers and brokers anticipated a large demand for fertilizer materials. Crop prices were high. The cotton growers in the South, by far the largest consumers of commercial fertilizers, had not yet felt the full force of deflation. Corn, wheat, potatoes, and vegetables and fruit were still bringing war prices. At those prices the planting of large acreages and the use of generous quantities of fertilizers seemed quite proper and desirable. Since that time the agricultural situation has become a gloomy one indeed. With the disastrous decline in the value of agricultural products, the producers have had ample reason to become discouraged. The great fertilizer-consuming territory of the Cotton Belt is not making the heavy purchases of fertilizers that it has been in the habit of doing for years past. The same is true of the potato growers, fruit growers, vegetable growers, as well as the general farmers in the Middle West and along the Atlantic Seaboard. As a result of this condition, large stocks of French and German potash, of animal ammoniates, of nitrate of soda and sulfate of ammonia have accumulated. To make matters worse, the export demand for sulfate of ammonia and cottonseed meal has shrunk amazingly because of the unfavorable exchange conditions. Cottonseed meal has become so cheap as to offer again attractive values for the mixers of commercial fertilizers. Brokers are offering nitrate of soda at less than \$60 per ton, sulfate of ammonia, at less than \$70 per ton; acid phosphate for as little as \$16 per ton, and ammonia in animal tankage for as little as \$3 or \$3.25 per unit of ammonia where only a short time ago ammonia in tankage and fish was selling for as high as \$7 or \$8 per unit. Potash salts have shown a corresponding shrinkage and muriate of potash is offered by some brokers for considerably less than \$100 per ton, and kainit for \$20 a ton or less. Whether the further decline that are likely to come will be more or less striking remains to be seen. It is the belief among many well informed persons that the bottom prices have been nearly if not quite reached.

It is generally agreed that the cost of phosphoric acid in mixed fertilizers has been excessively high for the past three or four years. While it is true that both phosphate rock and sulfuric acid (used in the manufacture of acid phosphate) have greatly increased in price, it is also true that many of the manufacturers of acid phosphate have had long term contracts for both phosphate rock and sulfuric acid at relatively low prices. They have evidently made the most of their opportunities and are loath to lose the large profits made in the past few years. The situation is, however, bound to adjust itself, since there is much pressure from various directions—among them, the development in the use of newer methods for the manufacturing of available phosphates. The producers of potash in Germany and France exacted the maximum price from American consumers as long as the condition of our markets warranted it. The indications are that the developments of the next few months will tend toward a further depression in the prices

of potash materials with the result that the cost of potash will be considerably nearer than it is now to pre-war prices. Of course, no one need expect that we shall reach pre-war prices either in the case of potash salts or acid phosphate.

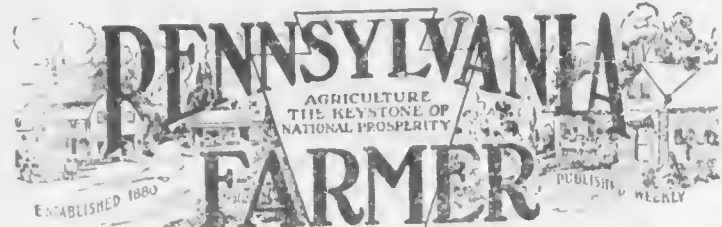
The producers of nitrate of soda in Chile are feeling the force of the situation as are other producers of plant-food. Recently an act was introduced for the organization of the producers of nitrate in Chile. The proposed organization would become more efficient not only in the production and shipping of nitrate of soda but also in the distribution of this fertilizer. It is proposed by the Chilean miners of nitrate to develop a selling organization that would eliminate so far as possible some of the middlemen and allow of more direct touch with the consumers. By making such economies they will be enabled, no doubt, to sell nitrate of soda at fairly reasonable prices in spite of some of the higher costs that enter into the manufacture and transportation of the material.

In the case of sulfate of ammonia, the capacity of the by-product ovens in the United States has been rapidly increasing until the output is now approximately a half million tons of sulfate of ammonia per annum. With normal exchange conditions, much of this sulfate of ammonia would be exported, particularly to Japan. With the unsettled economic conditions in Japan and the adverse exchange rates in the European countries, a large part of the sulfate of ammonia manufactured in the United States must be offered to our manufacturers of commercial fertilizers. For this reason, there has been a rapid decline in the cost of sulfate of ammonia. Last spring it sold for as high a figure as \$125 or \$130 per ton for export. The lower price of nitrate of soda and likewise the lower prices of tankage, fish and cottonseed meal have been largely responsible, especially from the decline in the export trade, for the shrinkage in the cost of sulfate of ammonia.

As one studies the situation carefully, he is led to feel that the present abnormal conditions are only temporary. It is safe to predict that in a few months the feeling among our farmers will be a more optimistic one. Their attitude toward the use of commercial fertilizers will improve. The fertilizer trade will again assume a more or less normal appearance and the tendency toward the adoption of more intensive methods, among them the use of larger quantities of fertilizer per acre, will again be emphasized as it has been since the beginning of the present century. It is to be hoped that both the fertilizer manufacturers and the farmers will have learned a lesson that will eliminate all low-grade and relatively expensive brands, will reduce their overhead costs and will make their business more efficient. Farmers should learn to co-operate, and to use plant-food more wisely as well as more generously in order that human and animal food may be produced at the lowest cost per unit.—J. G. Lipman.

The farmer has spent a good many centuries learning how to raise crops; now he is beginning to take an interest in marketing them.

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Our Washington Letter

The agricultural appropriation bill, covering the expenditures of the Department of Agriculture for the next fiscal year, is now before the House, and is receiving much attention. It carries a total of \$32,517,459, which represents an increase of \$1,875,495 over the present year's appropriation, but is \$19,511,925 less than was asked for by the department.

Of this increase \$875,495 represents the additions to the regular items, while the remainder, \$1,000,000 is for the purchase of timber lands. Live stock men asked for \$1,000,000 for bovine tuberculosis eradication work, and the committee allowed \$495,360 for this purpose. An increase of \$50,000 was allowed in the appropriation for dairy investigations. The appropriation for hog cholera eradication was increased by \$100,000 over the present year's appropriation. An increase of \$150,000 was allowed for the control of the brown tail and gypsy moths. A new item of \$100,000 was allowed for the control of the Mexican bean weevil. Two new offices are created by the bill, a director of scientific work and a director of regulatory work. The bill provides for the consolidation of the Bureau of Markets and Bureau of Crop Estimates, with an appropriation of \$2,939,440. The appropriation of \$239,000 for the annual free distribution of seeds was eliminated, but an amendment introduced by Congressman John W. Langley of Kentucky, provides for an appropriation of \$260,000 for the Congressional free seed distribution, was carried by a vote of 85 to 72. Representative McLaughlin of Michigan tried to have the amount of the appropriation reduced to \$240,000 but his amendment was lost. "I think that by continuing this appropriation for the distribution of vegetable seeds," said Representative Langley, "we assist in preventing profiteering by the seed dealers. If we discontinue the congressional distribution of seeds, as the committee proposed, it is my opinion that the private seed dealers will immediately advance their prices 20 or 25 per cent, and perhaps more, so that my amendment is intended partly to prevent profiteering at the expense of the farmers." And the House proceeded with this farce comedy without apparently sensing the ridiculousness of the situation.

Efforts are being made on the floor of the House to amend the bill, mostly for the purpose of reducing the total amount written into it by the committee, by cutting out various items. So far, however, nearly all these amendments have been defeated by a fair majority, indicating that the bill will reach the Senate in practically the same form as it came from the committee.

In the hearings, Assistant Secretary of Agriculture E. D. Ball pointed out that the Department of Agriculture has more research men in its employ than all other lines of government effort. The Department of Agriculture has 2778 scientific men; all other bureaus have 2296 men. Comparing salaries paid in the Army and Navy with those paid in the Department of Agriculture, Dr. Ball said the colonel in the Army, captain in the Navy, assistant surgeon general, hydrographic

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or geodetic engineer, after the first five years, get \$6330. The lieutenant colonel of the Army, commander in the Navy, senior surgeon and hydrographic engineer of the same rank, after the first five years, get \$5120. The major of the Army and lieutenant commander of the Navy get \$4165. The first lieutenant of the Army gets \$3427, about the average received by leaders of the great projects of the Department of Agriculture. The average salary they are getting now is \$3431. This means that the lieutenant in the army ranks with the men handling the big work of the Department of Agriculture. The Treasury Department has 94 men here that draw salaries ranging from \$10,000 to \$12,000; the other departments of government have 371 men receiving \$5000 or more against one man in the Department of Agriculture receiving as much as \$5000, and nine men receiving \$5000. The farmers of Illinois are paying their county agents an average of \$300 more per year than is received by the project leaders in the Department of Agriculture.

Hearings on the general revision of the tariff, before the Ways and Means Committee of the House of which Representative Joseph W. Fordney of Michigan is chairman, have been in progress for some time. Three days were given to agricultural schedules. The committee is affording the producers every opportunity to state their case, with the evident desire of securing the largest possible amount of information as to the needs of the various groups of farmers for a protective tariff on their products.

Dr. T. C. Atkeson, representing the National Grange, discussed the tariff problem from the standpoint of the greatest good to the greatest number. He said industry needs to note the fact that the farmers, although buyers at the market prices of everything the protected American industries manufacture, seek no reduction in the process of these products such as would come from open competition with the world. Although numbering more than a third of the population, and being consumers of the products of American urban industries to a value at least proportionate to their numbers, they ask no free trade competition to enable them to buy cheaply. It was emphasized by Dr. Atkeson that the product of the farm is as much a finished product as that of the mill or factory; that farm crops are not raw materials, and in any tariff discussion they should be considered along with other finished manufactured products.—E. E. Reynolds.

HARRISBURG LETTER

Delays in New Legislation.—While the number of bills poured into the two branches of the Legislature is greater than known at this period of a session in a long time the absence of many measures which have been much discussed in the last year has been a disappointment to quite a few members of the general assembly who had looked for bills to be submitted promptly and a program to be a thing of black and white. As it is, the State Highway Department is the only one to have its bills in hands of the committees and they call for something like a dozen millions with some readjustments of methods of disbursements of funds when not matched by counties. The Governors' bills are either in sketches or in the hands of the Attorney General who received them only recently, while the Health Department measures, which rumor says will take something like \$8,000,000, have not showed up. Other bills are in the hands of draftsmen and the result is that it will be well in February before what was talked of in September is in hand. At the same time there is a disposition among members of the House to insist upon a date for adjournment in April being set and as the idea is favored by men in high places if not by some in Harrisburg it may work out. There is no questioning the fact that there is latent temper in the House and enough misplays were made in handling jobs to induce people to stir it up when the session gets to running strong.

What \$90,000,000 Means.—Governor Sproul's declaration in favor of a \$90,000,000 limit to appropriations was, of course, predicated upon there being no new tax legislation, and it is hard to say whether there will be any. The coal tax bill will go in and so will the manufacturing tax bill, but whether there will be much motive power remains to be seen. The Governor's statement is being interpreted here more in the nature of a warning not to bring in many salary raisers and as a curb on new jobs, while also conveying the idea that the Governor's pen is the last to work on a bill. The Governor has some ambitious plans for legislation, but is now disposed to await business developments to see how the money will come in. A decrease in revenues under the present system is anticipated, although not being noised about very much.

The Fanny Stuff.—It seems probable the Legislature will be rather rough with some of the legislation classed under the head of measures for the welfare of the race and that a disposition to be more solicitous of the health of a child of six than for jobs in pre-natal clinics will be manifested. Some indication of just what is going to happen may be gained from the fact that the bill to regulate explosives which would have

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abandoned by the people behind it after "conferences." It may transpire that some of the frills which have replaced old Health Department methods may also be given up. There is a tendency among legislators to scrutinize pretty closely Public Service bills and to put the fiscal affairs of Father Penn on a more business like basis. The Departments of Agriculture and Forestry will probably have the most sympathetic ears of any on Capitol Hill because it is recognized both have been running along with a low supply of gasoline, so to speak, and are capable of meeting considerable needs if given the funds. Unfortunately the legislation to carry out their plans have not yet appeared and can not be forecast.

Forests That Will Pay.—Commissioner Gifford Pinchot is confident that State can show a return on money invested in forest lands that will be a very important addition to the school funds in a short space of years. He believes there is land now available, if the state will make the necessary appropriation, that can be made to earn handsomely against the time when the state will be casting around for revenue. The commissioner also believes the showing from lands now operated in rather indicative of what can be done.

A \$3,000,000 Jump.—The State Board of Public Charities has recommended \$19,231,000 be appropriated to state, semi-state and non-state charities. Last session \$16,544,000 was appropriated. The sum of \$1,500,000 is recommended for purely state institutions over and above what they got last session and less than \$100,000 for the semi-state. The rest is for institutions the state does not control. In addition the Board recommends \$5,000,000 for the care of the insane. This means \$24,000,000 in round numbers, a quarter of the state revenue, if the most favorable figure is taken.

\$6,000,000 More For Schools.—While bills for various increases in the educational allowances are appearing it commences to look as though there would not be more than \$6,000,000, perhaps \$8,000,000 at the very outside, added to the school appropriation. One of the teachers salary bills in hand calls for something like \$15,000,000 additional and there are sums yet due for teachers salary increases and for teachers retirement to be met. Then, too, there will be increases asked for administration, normal schools, aid of rural districts and various other objects. It is going to take some pretty strenuous work to get the funds needed for educational expansion in the face of the demands of the charities. The educational bills will probably take form after the school directors' conference here the second week in February as the thoughts of business end of the school administration as desired.

A Great Farm Show.—It is estimated over 30,000 persons attended the State Farm Products Show and the sentiment among them and the hundreds who were at meetings of organizations in session here was favorable to a State Fair. The Governor and other officials advocated it and resolutions favoring it were adopted. However, there does not seem to be any concerted movement in the Legislature for it. And meanwhile the people interested in local fairs are very much on the job. The corn and apple exhibits were notable and presence of the boys judging corn was an inspiration to many.

NEW YORK LETTER

Prison Population Reduced.—One year of prohibition cut prison commitments in this state more than one-half and reduced the prison population 17 per cent, according to the report of the State Commission on Prisons. The decrease amounts to 26,142 in a year. The report is for the year ending June 30. Since that time industrial depression has had the usual effect in increasing crime.

February Milk Price Drops.—The Dairymen's League advises its members to accept a drop of 60 cents a hundred pounds for February milk, although conceding that such price would be below cost of production. This will be \$2.58 for 3 per cent milk, in the 200-210-mile zone. The concession was made because of extremely bad market conditions. It averages a drop of 11 cents a quart, which the dealers, according to long custom, only to the consumers, according to long custom, which rule that increases in the wholesale price are passed on in full or a little more very promptly while decreases are halved or otherwise sliced in favor of the dealer's pocket.

Noted Agricultural Expert Retires.—Dr. W. H. Jordan, head of Geneva Experiment Station for 24 years, has announced his retirement. The state will find it very difficult to fill the position with a man who will serve farm interests in the face of financial and political pressure, so unfavourably and courageously as Dr. Jordan has.

Onions A Loss.—In Onondaga onion growers are offering onions at 10 cents a bushel net. Few shipments are being made. Local business men complain that onion growers are not able to make payments on supplies purchased of them, as the crop was a loss.

Milk Export Moved.—After spending two years in developing the big Auburn Dairymen's

League co-operative plant, the biggest yet built on the co-operative plan, the League has moved the Auburn manager, S. D. Williams, to its new plant at Burke, where a new farmer-owned powdered milk plant is being established.

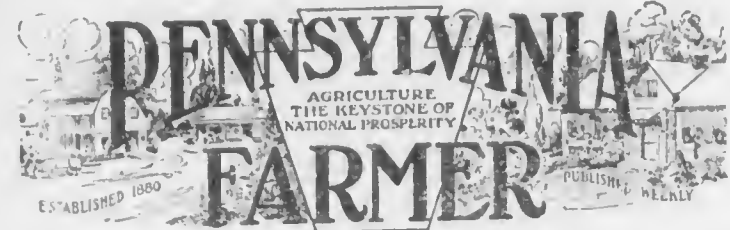
Better Roads.—After two years of inactivity in the state's highway construction the new administration is putting into force sensible regulations. Long year after rather than long mileage is recommended. A map is to be presented to the Legislature when an appropriation for 1921 construction is asked. The map will show a connected system of improved roads, thus eliminating political and selfish purposes. Over 1200 miles of road will have to be repaired within the next three years. Many roads have been surveyed and some built for political purposes only.

Schools Closed.—The Federal officials say that 20,000 schools were closed in 1920 because of scarcity of teachers. New York rural schools have suffered greatly, as comparatively few are able to get competent teachers. Untrained young girl teachers have placed rural education on a poor basis in the state. This, with the unprofitable financial status of farming has placed the state's rural population at 1,794,000, which includes all villages under 2500 population, as compared to 8,589,000 in the cities of the state. Probably less than one-half of the so-called rural population really lives on farms.—M. G. F.

NEW JERSEY NEWS

Legislation Introduced.—Agriculturists in New Jersey are most interested in the following bills introduced in the Senate at the 1921 session of the Legislature. Allen, Salem, increases from \$2 to \$3 per day pay for freeholders in counties not granting them an annual salary; Mackay, Bergen, permitting county school superintendents to procure census in township school districts of persons between the ages of seven and sixteen years to better enforce attendance in classes; Stevens, Monmouth, authorizing State Commissioner of Education to name county medical inspectors; Stevens, Monmouth, fixing season for killing deer from December 15 to 20 and reducing period six days; Wallworth, Camden, reducing from five to three commissioners on Public Utility Board, leaving power of their appointment with the Governor, and fixing salary of each at \$12,000 per year; Parry, Essex, providing for open specifications on all road constructions in the state; Runyon, Union, requiring sheriffs, wardens of jails, etc., to furnish list of prisoners, such lists to go to organizations designed to aid prisoners in obtaining employment; Sturgess, Gloucester, requiring state motor vehicle commissioner to name ten persons to register motor vehicles in first-class counties; seven in second-class counties; five in third-class counties, and four in fourth-class counties, agents in the third and fourth-class counties to receive a fee of 50 cents for each license granted in lieu of other compensation; Case, Somerset, authorizing freeholders to alter rights of way and grades of highways by entering into contracts with owners; Case, Somerset, creating a state police department with two troops under a superintendent to be named by the Governor for a term of five years at a salary of \$5000 annually, giving troopers \$1200 yearly, and requiring superintendent and deputy captains and lieutenants to have served two years in the United States Army with rank not lower than lieutenant. House—Guthrie, Mercer, prohibiting employment of persons for more than six days in a week excepting workers in dairies, those caring for live animals, janitors, watchmen, bakers, etc.; Blackwell, Mercer, authorizing the governing body of any municipality to appropriate money in aid of volunteer fire departments; Lyons, Middlesex, making uniform the day for the annual organization of the boards of chosen freeholders in all of the counties of the state the first Monday in January; Franklin, Essex, enabling any judge of a court in counties of the first-class to appoint interpreters of any foreign language; Looft, Hudson, creating a pension for county detectives similar to that now in force respecting police officers; Pierson, Union, amends the election law of 1920 by providing adequate provisions for women voting; Downs, Morris, placing in the hands of the board of freeholders of the counties power to fix the amount to be paid for feed, maintenance, etc., per week for children committed to any institution.

Farmers to Co-operate.—The State Federation of Tomato Growers' Associations and the New Jersey Swine Breeders' Association has made definite arrangements with the State Federation of county Boards of Agriculture for the handling of their problems. The tomato growers have assisted the county board to assist them in perfecting their marketing methods and in other branches of their work. The Federation will name a state committee to be composed of prominent tomato growers for the purpose of making a special study of the tomato situation in New Jersey and offer to the federation recommendations for action. The state committee will co-operate with committees in the several counties to study local conditions. The Swine Breeders' Association has voted to abandon its charter and turn its work over to the federation. The executive committee of the county board has appropriated \$210 for support of an effort to reduce freight rates on peaches.—Kelly, Trenton.



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With this definition of the work of each, there is no occasion for any jealousy and antagonism between these two great movements. We hope there will be none, but rather that all farmers will join in making both still more effective and more useful in promoting the best interests of farming and the rural life.

Our Washington Letter

The agricultural appropriation bill, covering the expenditures of the Department of Agriculture for the next fiscal year, is now before the House, and is receiving much attention. It carries a total of \$33,517,459, which represents an increase of \$1,875,495 over the present year's appropriation, but is \$19,511,925 less than was asked for by the department.

Of this increase \$875,495 represents the additions to the regular items, while the remaining \$1,000,000 is for the purchase of timber lands. Live stock men asked for \$1,000,000 for bovine tuberculosis eradication work, and the committee allowed \$498,360 for this purpose. An increase of \$50,000 was allowed in the appropriation for dairy investigations. The appropriation for hog cholera eradication was increased by \$100,000 over the present year's appropriation. An increase of \$150,000 was allowed for the control of the brown tail and gypsy moths. A new item of \$100,000 was added to the control of the Mexican bean weevil. Two new offices are created by the bill, a director of scientific work and a director of regulatory work. The bill provides for the consolidation of the Bureau of Markets and Bureau of Crop Estimates, with an appropriation of \$2,939,440. The appropriation of \$233,000 for the annual free distribution of seeds was eliminated, but an amendment introduced by Congressman John W. Langley of Kentucky, provides for an appropriation of \$360,000 for the Congressional seed distribution, was carried by a vote of 83 to 72. Representative McLaughlin of Michigan tried to have the amount of the appropriation reduced to \$240,000 but his amendment was lost. "I think that by continuing this appropriation for the distribution of vegetable seeds," said Representative Langley, "we assist in preventing profiteering by the seed dealers. If we discontinue the congressional distribution of seeds, as the committee proposed, it is my opinion that the private seed dealers will immediately advance their prices 20 or 25 per cent, and perhaps more, so that my amendment is intended partly to prevent profiteering at the expense of the farmers." And the House proceeded with this farce comedy without apparently sensing the ridiculousness of the situation.

Efforts are being made on the floor of the House to amend the bill, mostly for the purpose of reducing the total amount written into it by the committee, by cutting out various items. So far, however, nearly all these amendments have been defeated by a fair majority, indicating that the bill will reach the Senate in practically the same form as it came from the committee.

In the hearings, Assistant Secretary of Agriculture E. D. Ball pointed out that the Department of Agriculture has more research men in its employ than all other lines of government effort. The Department of Agriculture has 373 scientific men, all other bureaus have 3296 men. Comparing salaries paid in the Army and Navy with those paid in the Department of Agriculture, Dr. Ball said the colonel in the Army, captain in the Navy, assistant surgeon general, hydrographic

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or geodetic engineer, after the first five years, get \$6330. The lieutenant colonel of the Army, commander in the Navy, senior surgeon and hydrographic engineer of the same rank, after the first five years, get \$5120. The major of the Army and Lieutenant commander of the Navy get \$4165. The first lieutenant of the Army gets \$3427, about the average received by leaders of the great projects of the Department of Agriculture. The average salary they are getting now is \$3443. This means that the lieutenant in the army ranks with the men handling the big work of the Department of Agriculture. The Treasury Department has 94 men here that draw salaries ranging from \$10,000 to \$12,000; the other departments of government have 371 men receiving \$5000 or more against one man in the Department of Agriculture receiving as much as \$6000, and nine men receiving \$5000. The farmers of Illinois are paying their county agents an average of \$260 more per year than is received by the project leaders in the Department of Agriculture.

Hearings on the general revision of the tariff, before the Ways and Means Committee of the House of which Representative Joseph W. Fordney of Michigan is chairman, have been in progress for some time. Three days were given to the agricultural schedules. The committee is affording the producers every opportunity to state their case, with the evident desire of securing the largest possible amount of information as to the needs of the various groups of farmers for a protective tariff on their products.

Dr. T. C. Atkeson, representing the National Grange, discussed the tariff problem from the standpoint of the greatest good to the greatest number. He said industry needs to note the fact that the farmers, although buyers at the market of everything the protected American industries manufacture, seek no reduction in the process of these products such as would come from open competition with the world. Although numbering more than a third of the population, and being consumers of the products of American urban industries to a value at least proportionate to their numbers, they ask no free trade competition to enable them to buy cheaply. It was emphasized by Dr. Atkeson that the product of the farm is as much a finished product as that of the mill or factory; that farm crops are not raw materials, and in any tariff discussion they should be considered along with other finished manufactured products.—E. E. Reynolds.

HARRISBURG LETTER

Delays in New Legislation.—While the number of bills poured into the two branches of the Legislature is greater than known at this period of a session in a long time the absence of many measures which have been much discussed in the last year has been a disappointment to quite a few members of the general assembly who had looked for bills to be submitted promptly and a program to be a thing of black and white. As it is, the State Highway Department is the only one to have its bills in hands of the committees and they call for something like a dozen million with some readjustments of methods of disbursements of funds when not matched by counties. The Governors' bills are either in sketches or in the hands of the Attorney General who received them only recently, while the Health Department measures, which rumor says will take something like \$8,000,000, have not showed up. Other bills are in the hands of draftsmen and the result is that it will be well in February before what was talked of in September is in hand. At the same time there is a disposition among members of the House to insist upon a date for adjournment in April being set and as the idea is favored by men in high places if not by some in Harrisburg it may work out. There is no questioning the fact that there is latent temper in the House and enough misplays were made in handling jobs to induce people to stir it up when the session gets to running strong.

What \$90,000,000 Means.—Governor Sproul's declaration in favor of a \$90,000,000 limit to appropriations was, of course, prefaced upon there being no new tax legislation, and it is hard to say whether there will be any. The coal tax bill, but whether there will be much motive power remains to be seen. The Governor's statement is being interpreted here more in the nature of a warning not to bring in many salary raisers and as a curb on new jobs, while also conveying the idea that the Governor's pen is the last to work on a bill. The Governor has some ambitious plans for legislation, but is now disposed to await business developments to see how the money will come in. A decrease in revenues under the present system is anticipated, although not being noised about very much.

The Fancy Stuff.—It seems probable the Legislature will be rather rough with some of the legislation classed under the head of measures for the welfare of the race and that a disposition to be more solicitous of the health of a child of six than for jobs in pre-natal clinics will be manifested. Some indication of just what is going to happen may be gained from the fact that the bill to regulate explosives which would have

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evolved a state system of control, with jobs, was abandoned by the people behind it after "conferences." It may transpire that some of the frills which have replaced old Health Department methods may also be given up. There is a tendency among legislators to scrutinize pretty closely Public Service bills and to put the fiscal affairs of Father Penn on a more business like basis. The Departments of Agriculture and Forestry will probably have the most sympathetic ears of any on Capitol Hill because it is recognized both have been running along with a low supply of gasoline, so to speak, and are capable of meeting considerable needs if given the funds. Unfortunately the legislation to carry out their plans have not yet appeared and can not be forecast.

Forests That Will Pay.—Commissioner Gifford Pinchot is confident that State can show a return on money invested in forest lands that will be a very important addition to the school funds in a short space of years. He believes there is land now available, if the state will make the necessary appropriations, that can be made to earn handsomely against the time when the state will be casting around for revenue. The commissioner also believes the showing from lands now operated in rather indicative of what can be done.

A \$3,000,000 Jump.—The State Board of Public Charities has recommended \$19,231,000 be appropriated to state, semi-state and non-state charities. Last session \$16,544,000 was appropriated. The sum of \$1,500,000 is recommended for purely state institutions over and above what they got last session and less than \$100,000 for the semi-state. The rest is for institutions the state does not control. In addition the Board recommends \$5,000,000 for the care of the insane. This means \$24,000,000 in round numbers, a quarter of the state revenue, if the most favorable figure is taken.

\$6,000,000 More For Schools.—While bills for various increases in the educational allowances are appearing it commences to look as though there would not be more than \$6,000,000, perhaps \$8,000,000 at the very outside, added to the school appropriation. One of the teachers salary bills in hand calls for something like \$15,000,000 additional and there are sums yet due for teachers salary increases and for teachers retirement for administration, normal schools, aid of rural districts and various other objects. It is going to take some pretty strenuous work to get the funds needed for educational expansion in the face of the demands of the charities. The educational bills will probably take form after the school directors' conference here the second week in February as the thoughts of business end of the school administration as desired.

A Great Farm Show.—It is estimated over 30,000 persons attended the State Farm Products Show and the sentiment among them and the hundreds who were at meetings of organizations in session here was favorable to a State Fair. The Governor and other officials advocated it and resolutions favoring it were adopted. However, there does not seem to be any concerted movement in the Legislature for it. And meanwhile the people interested in local fairs are very much on the job. The corn and apple exhibits were notable and presence of the boys judging corn was an inspiration to many.

NEW YORK LETTER

Prison Population Reduced.—One year of prohibition cut prison commitments in this state more than one-half and reduced the prison population 17 per cent, according to the report of the State Commission on Prisons. The decrease amounts to 26,142 in a year. The report is for the year ending June 30. Since that time industrial depression has had the usual effect in increasing crime.

February Milk Price Drops.—The Dairyman's League advises its members to accept a drop of 60 cents a hundred pounds for February milk, although conceding that such price would be below cost of production. This will be \$2.58 for 3 per cent milk, in the 200-210-mile zone. The concession was made because of extremely bad market conditions. It averages a drop of 14 cents a quart, which the dealers which pass in part only to the consumers, according to long custom, which rules that increases in the wholesale price are passed on in full or a little more very promptly while decreases are halved or otherwise sliced in favor of the dealer's pocket.

Noted Agricultural Expert Retires.—Dr. W. H. Jordan, head of Geneva Experiment Station for 24 years, has announced his retirement. The state will find it very difficult to fill the position with a man who will serve farm interests in the face of financial and political pressure, so unflinching and courageously as Dr. Jordan has.

Onions a Loss.—In Canastota onion growers are offering onions at 10 cents a bushel net. Few shipments are being made. Local business men complain that onion growers are not able to make payments on supplies purchased of them, as the crop was a loss.

Milk Expert Moved.—After spending two years in developing the big Auburn Dairyman's

League co-operative plant, the biggest yet built on the co-operative plan, the League has moved the Auburn manager, S. D. Williams, to its new plant at Burke, where a new farmer-owned powdered milk plant is being established.

Better Roads.—After two years of inactivity in the state's highway construction the new administration is putting into force sensible regulations. Long yearage rather than long mileage is recommended. A map is to be presented the Legislature when an appropriation for 1921 construction is asked. The map will show a connected system of improved roads, thus eliminating political and selfish purposes. Over 1203 miles of road will have to be repaired within the next three years. Many roads have been surveyed and some built for political purposes only.

Schools Closed.—The Federal officials say that 20,000 schools were closed in 1920 because of scarcity of teachers. New York rural schools have suffered greatly, as comparatively few are able to get competent teachers. Untrained young girl teachers have placed rural education on a poor basis in the state. This, with the unprofitable financial status of farming has placed the state's rural population at 1,794,000, which includes all villages under 2500 population, as compared to 8,539,000 in the cities of the state. Probably less than one-half of the so-called rural population really lives on farms.—M. G. F.

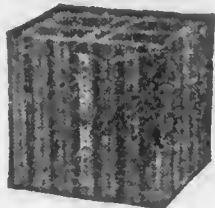
NEW JERSEY NEWS

Legislation Introduced.—Agriculturists in New Jersey are much interested in the following bills introduced in the Senate at the 1921 session of the Legislature. Allen, Salem, increases from \$3 to \$5 per day pay for freeholders in counties not granting them an annual salary; Mackay, Bergen, permitting county school superintendents to procure census in township school districts of persons between the ages of seven and sixteen years to better enforce attendance in classes; Stevens, Monmouth, authorizing State Commissioner of Education to name county medical inspectors; Stevens, Monmouth, fixing season for killing deer from December 15 to 20 and reducing period six days; Wallworth, Camden, reducing from five to three commissioners on Public Utility Board, leaving power of their appointment with the Governor, and fixing salary of each at \$12,000 per year; Parry, Essex, providing for open specifications on all road constructions in the state; Runyon, Union, requiring sheriffs, wardens of jails, etc., to furnish list of prisoners to be discharged within the following two months, such lists to go to organizations designed to aid prisoners in obtaining employment; Sturges, Gloucester, requiring state motor vehicle commissioner to name ten persons to register motor vehicles in first-class counties; seven in second-class counties; five in third-class counties, and four in fourth-class counties, agents in the third and fourth-class counties to receive a fee of 50 cents for each license granted in lieu of other compensation; Case, Somerset, authorizing freeholders to alter rights of way and grades of highways by entering into contracts with owners; Case, Somerset, creating a state police department with two troops under a superintendent to be named by the Governor for a term of five years at a salary of \$5000 annually, giving troopers \$1200 yearly, and requiring superintendent and deputy, captains and lieutenants to have served two years in the United States Army with rank not lower than Lieutenant. House—Guthrie, Mercer, prohibiting employment of persons for more than six days in a week excepting workers in dairies, those caring for live animals, janitors, watchmen, bakers, etc.; Blackwell, Mercer, authorizing the governing body of any municipality to appropriate money in aid of volunteer fire departments; Lyons, Middlesex, making uniform the day for the annual organization of the boards of chosen freeholders in all of the counties of the state the first Monday in January; Franklin, Essex, enabling any judge of a court in counties of the first-class to appoint interpreters of any foreign language; Loomis, Hudson, creating a pension for county detectives similar to that now in force respecting police officers; Pierson, Union, amends the election law of 1920 by providing adequate provisions for women voting; Downs, Morris, placing in the hands of the board of freeholders of the counties power to fix the amount to be paid for food, maintenance, etc., per week for children committed to any institution.

Farmers to Co-operate.—The State Federation of Tomato Growers' Associations and the New Jersey Swine Breeders' Association has made definite arrangements with the State Federation of county Boards of Agriculture for the handling of their problems. The tomato growers have asked the county boards to assist them in perfecting their marketing methods and in other branches of their work. The federation will name a state committee to be composed of prominent tomato growers for the purpose of making a special study of the tomato situation in New Jersey and offer to the federation recommendations for action. This state committee will co-operate with committees in the several counties to study local conditions. The Swine Breeders' Association has voted to abandon its charter and turn its work over to the federation. The executive committee of the county boards has appropriated \$210 for support of an effort to reduce freight rates on peaches.—Kelly, Trenton.

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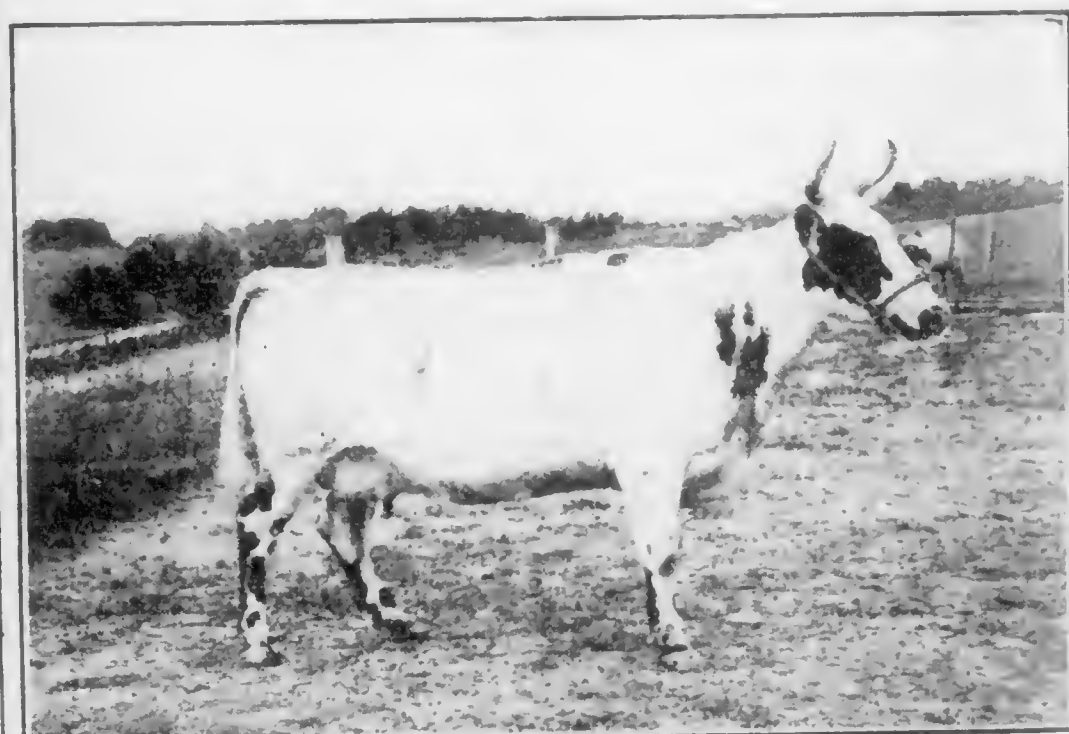


The Development of Milking Machines

ONE of the important problems in milk production is that of labor involved in milking, and efforts have been made to perfect a mechanical milking machine which will perform this operation as well as the hand milker. The present mechanical milkers are not perfect yet they are so far advanced over the first experimental machines that they may be classed among the practical labor saving machines for the dairy farmer.

As early as 1819 work was started on the invention of milking machines but no definite information can be obtained concerning their description or illustration. The simplest scheme of milking was the use of straws which were inserted in the cows teats and the milk allowed to run from the milk cistern. However, straws were not used for any length of time as they were more or less contaminated and soon injured the udders. They served a very useful purpose though by leading up to work, beginning in 1878, on the actual development of the mechanical milker which was based upon following principles.

Among the early mechanical milkers developed on the principle of milking by pressure were two invented in Pennsylvania and the one present popular suction milking machine was developed in this state and is now being manufactured in large numbers to supply the ever increasing demand for a reliable mechanical milking machine.



"A Winner." Registered Ayrshire, Masonic Home, Pa.

The first, the milk tube, working on the same principle as the straw noted above, is an apparatus that provides an opening into the milk cistern and allows the milk to flow from the udder. While this system is practical in some instances, as in diseased udders, it however, becomes dangerous and impractical under average dairy conditions, owing to the fact that it is essential to sterilize and keep sterilized that part of the milk tube which is inserted into the teats.

The second step in the development of the milking machine was the use of pressure which was applied at the base of the teat, closing the milk duct, and then forcing the milk out by applying a downward pressure upon the teat.

The third principle was based on suction; the teat being placed in a cup out of which air was exhausted producing a vacuum. The atmospheric pressure of the air on the surface of the udder tends to force the milk into the milk duct of the teats where it is drawn out by the vacuum in the teat cups. This suction is produced by a pump and the principle

The modern mechanical milker employs suction for drawing the milk and either atmospheric or a stronger pressure for massaging the teats in order to restore the normal blood circulation. A general classification of milking machines may be based on the kind or strength of pressure used in massaging the teats or else the machines may be grouped according to the type of teat cup employed. For example, one group uses a single chambered teat cup which has only one action and draws the milk out by suction without any mechanical aid to the blood circulation while the other group makes use of a double chambered teat cup which alternately draws the milk by suction and then massages the teats with air pressure.

The modern mechanical milker although not a perfect machine is both a practical and a safe labor saving device for the dairyman with a fair-sized herd. This has been proven both by experimental work and by the large number of satisfied users of the various makes of machines on the market.

Failures with milking machines in

the past have been rather numerous but these have been largely due to the fault of the operator rather than any serious fault of the machines. Of the several factors entering into the success of mechanical milking the operator is the most important. He must not only have a working knowledge of the mechanical operation of the machine but he must also have a thorough knowledge of the peculiarities of each cow in order to best milk each individual. Then, too, he must see that each part of the machine is kept scrupulously clean. When these factors are carefully carried out any one of the modern standard mechanical milkers should prove successful for the average dairy farmer.

Handling Milking Machines

Success of mechanical milkers depends upon

1. Operator
2. Cow
3. Machines.

1. The man operating the milkers must thoroughly understand their care and working principles. He should follow all directions given by manufacturers.

2. One man can handle properly, two double units or three single units.

3. Operator should understand how each cow milks.

4. Some cows do not milk well with machines on account of excitability, tendency to hold up milk or abnormally shaped udders.

5. Unless cows are too valuable it pays to cull out those that are not successfully milked with machines.

6. Milking machines, when properly handled do not cause udder troubles. Be sure to remove machines as soon as no more milk comes down and finish stripping by hand promptly.

7. Experiments covering 5 years at Geneva Exp. Station show that machine milking, if properly done does not influence flow of milk to any extent capable of measurement.

8. When not in use keep teat cups and tubing immersed in solution of chloride of lime and salt. If they become dry between milkings, the rubber will crack.

9. Rinse machine and parts well before each milking.—A. L. Beam.

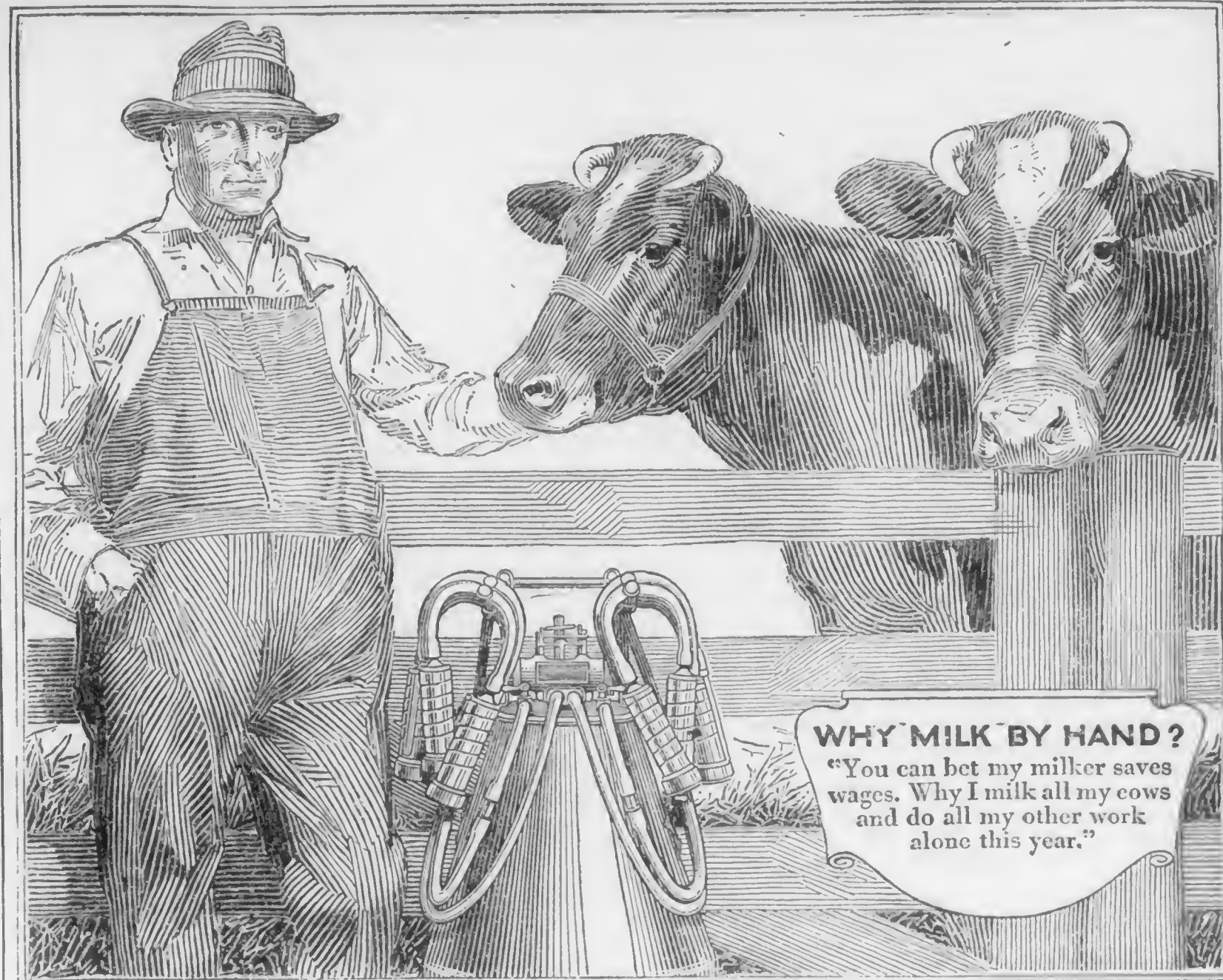
DANGEROUS COWS

Twenty-five dairy cows driven across the Maryland-York county line by cattle dealers in violation of the Interstate Cattle Law, were quarantined and inspected by agents of the Bureau of Animal Industry, Pennsylvania Department of Agriculture, and nine, or 36 per cent., of the cows were found to be so badly diseased that they were condemned for fertilizer.

The state line is being closely watched by bureau agents, and the state officials, in co-operation with the Federal Department of Agriculture, are exerting every effort to break up this illegal traffic in diseased cattle.

Prospective purchasers are warned against buying cattle unless a bona fide health certificate for each animal is furnished.

The diseased cattle in this instance were to have been offered at public sale in a section of Chester county which contains hundreds of good dairies. Had they not been caught and held by state agents they would, undoubtedly, have been bought by unsuspecting farmers, placed in their herds, with the result that tuberculosis would have spread.



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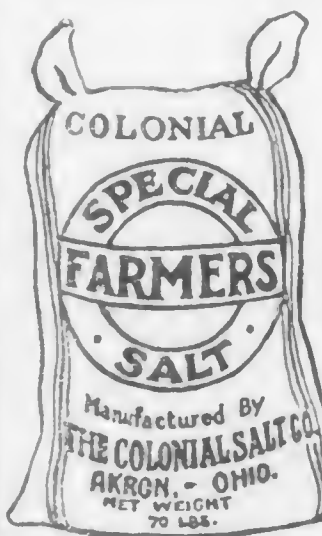
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HORTICULTURE

Cutting the Costs in Fruit Growing

J. P. STEWART

TWO outstanding facts have been developed from the experience of the present season. One is the necessity of greatly reducing the costs of production and the other is the need of greatly improving the quality of the product, if the average fruit grower is to remain in business. During the last couple of seasons preceding the present one, almost any kind of fruit would sell, mostly at a profit, but right now nothing but the best is wanted at all, and in many cases the profits that would otherwise accrue from the best are all eaten up in handling the off-grade stuff.

Some of the important ways in which the costs of production may be lowered without reducing the final quality of the product are by making some of the principal spraying materials at home, and by confining ones' purchases of fertilizers to the simple, unmixed materials. The wider use of the bulk shipment, thus eliminating both package and grading costs, is also an important resource, which is likely to be even more in evidence next fall than now. This form of shipment has been used very extensively and successfully in shipments of apples to the South and West this year, and has even made its appearance in some recent shipments of citrus fruits to the north.

The improvement in the quality of the product, as already pointed out in this column, is likely to come chiefly as a result of more and better use of the practices of pruning and thinning, and picking at the right degree of maturity. In connection with the thinning item, we may simply point out the fact that the thinning of certain varieties in the experiments in West Virginia increased the amount of marketable fruit by as much as 100 per cent in some cases, and as the surplus fruit would naturally have had to be taken off some time, and possibly would have been run over the grader if left until the regular picking, it is evident that this gain was secured practically without cost.

Making the Lime-Sulphur Spray

There are two important reasons for making the lime-sulphur spray material at home this year. One of these is the important saving in cost that can thus be effected, and the other is the fact that it is becoming increasingly difficult for the average grower to buy the liquid solution on the market at any price. This is because the dry preparations of so-called soluble sulphur are more convenient for the dealers to handle, and they are therefore dropping the liquid preparations entirely in many cases.

The gradual increase in price and deterioration in density of the commercial solution during the war and subsequent period, have materially increased the chances for distinct saving in the home preparation.

In the first place, it may be recalled that our original formula for this preparation called for one pound of lime to two pounds of sulphur to one gallon of finished product. This gave a concentrate of reasonable density,

averaging about 1.24 on the specific gravity hydrometer, and also dissolved the materials fairly well, leaving only a moderate amount of sludge when the materials and manipulation were good.

To get still less sludge and hence possibly a better utilization of materials, we later used and advised a little more water in the final product, thus giving a formula of about 1-2-1, instead of 1-2-1 as in the original formula. On this later formula, a very convenient quantity to make, especially with a 75-gallon cooker, is 45 lbs. of lime, 90 lbs. of sulphur and water enough to make 60 gallons of final product. Such an amount and proportion when properly made usually gives a density of 1.22 or better, with almost no heavy sludge or sediment.

One important precaution which should be mentioned in this connection is the necessity of keeping the volume at or above the desired final volume during the entire period of boiling, as otherwise the best dissolving of the materials is not secured. Occasionally we hear of some one who is doing the cooking with a relatively small amount of water, and then diluting the mass up to the desired final volume at or near the close of the boiling. He then wonders why he doesn't get better results. This course naturally is accompanied by all the evils of the boiling at greater densities, with none of the advantages of lessened storage space, as this is lost by the partial dilution near the close of the boiling.

There is also far too little attention paid to securing a really correct dilution of all kinds of concentrates when it comes to the actual spraying, and apparently considerable misunderstanding of how this dilution is correctly obtained. We have recently heard special lecturers on the subject advocating only the testing of the diluted spray material in the tank in order to determine whether the proper dilution had been made or not. This, of course, is impracticable as well as very inaccurate unless special precautions have been taken to get a thorough mixing of the contents of the tank before the reading is taken, and also unless a special hydrometer with extra wide spaces between degree or decimal marks is used.

The proper method of doing the diluting is to get the reading of the concentrate with a specific gravity hydrometer, and determine the rate of dilution from this either with the aid of a dilution table or by dividing the decimal of the concentrate reading by the decimal of the density of the desired spray. For example, if the concentrate shows a density of 1.24 and we are spraying for San Jose scale which requires a spray of the density of 1.03, we divide the .24 by .03 which gives a quotient of 8, and this is the total number of volumes to which the 1.24 concentrate must be diluted in order to leave a density of 1.03.

When the rate of dilution is determined, the practical way of making the dilution is to calculate the

number of gallons of concentrate required make the tank of desired spray and add it to the tank before the water and other materials are put in. This calculation is made by dividing the number of gallons which the tank holds by the number in the dilution rate. For example, if the tank holds 250 gallons and the rate of dilution is 8, the number of gallons of lime-sulphur required is one-eighth of 250, or about 31, to make the tank full at the density required.

This probably sounds a lot more complicated than it really is, but in any case, this process or its equivalent with the aid of dilution tables should be followed, whether the lime-sulphur concentrate is made at home or bought, as the commercial forms have been varying very widely of late, and it is totally unsafe to apply them without a definite test.

The other important precaution in making the concentrate at home is to make sure that the quality of lime is right. This means that it should be high in calcium and low in magnesium. Good, freshly burnt, stone lime carrying at least 90 per cent of calcium oxide should be used, and the higher this percentage can be exceeded without undue expense the better. Fortunately such lime is very generally available in most of the fruit sections of this state, at moderate prices. Hydrated lime can be used, but it has no advantages as compared with the unslaked form, and a third more is required.

NEXT WEEK'S FARM WORK

By R. W. DeBaun

For a whole year, I have been too busy to write an article for my Pennsylvania Farmer friends. The reason I have been so busy is because on Feb. 1, 1920, brother and I bought jointly two large vegetable farms near Newark, N. J. We have 150 acres in all, approximately 100 acres under the plow and much of that is being double cropped. Anyone who tells the farmers that they have nothing to do in winter has never been a good farmer.

We are planning to put a new roof on our bay barn and on the "lean to" shed which is used to stable our two cows and two heifers. The old roof has been on for perhaps thirty-five years. The shingles are unusually long so that the underlying shingle is too far apart for the cedar express shingles which are on the roof today at from \$12 to \$15 per thousand. Rather than replace the shingle lath for the shorter shingles, I will remove them and cover the roof with shiplap inch-thick boards. This will be covered with the newly devised heavy tarpaper, grit covered shingles. They can be secured for \$5.50 per thousand and are guaranteed for 20 years. The fun of it is that the new angled shingles can be laid very quick as they are perfectly uniform and four of them are in one piece. Any farm help can lay them. Last spring "The Annex" was built onto the church for suppers, entertainments, etc. The patent shingles were used and the work was done well and quickly by our neighbors. Therefore, the patent shingles gave advantages over the wooden ones.

Down in our woods there are at least a dozen large straight pin oaks free from knots. One of these days we will have to build a new house. Pin oak floor beams or studding, unless used green, gets so hard that it is quite impossible to drive nails into them. However, flooring is expen-

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BULLETIN 184 of the Mass. Exp. Sta., on page 52, shows that Scalecide (1 to 15) was 100% efficient in killing aphids while hatching and with only "slight injury" to foliage when "34 inch open."

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sive. Pin oak makes splendid oak floors, beautiful material for trim around windows and doors, baseboards and stairways. Therefore, we plan to get the trees to the saw mill and have them ripped up into 1½-inch boards. This material will be stacked under cover with slats between the boards. In that condition it will season beautifully and be solid and straight. Then when the time comes to build, the lumber will be taken to the planing mill and be put in just the shape and condition we desire to have it.

Our cross cut log saw needed attention, so one rainy day last week I set the teeth and then ran a flat file lightly over the points of the teeth. In this way I found which teeth were too long for their neighboring teeth. It took more time to file the saw than I supposed it would but now it is in perfect readiness. Saturday night while in town I stopped to get three wedges for felling trees. Prices may be coming down, but when the hardware man said 95 cents apiece I said "I'll take two and if I can find the old crippled wedges we used last year I may return one of these."

It seems to be human nature to enjoy doing big things such as felling mighty oaks. Those big oak trees weigh perhaps ten to fifteen tons with all the branches and yet we can make them fall exactly where we want them to lay. Nearby trees might prevent a falling tree from coming down, therefore, it is necessary to drop them just where they can fall all the way down. First, we decide where we want the tree to fall. Then with the axes, we make a wide flat notch into the side of the tree, 6 to 12 inches deep; just above the "flare out" caused by the roots and yet as low as convenient. The notch is made level and the back of the cut is made perfectly straight. Then we begin sawing from the other side; at all times we try to hold the saw level and parallel with the notch made by the axes. When the saw is far enough into the log, the wedges are inserted to prevent the saw from binding. At all times, wedges are kept tight and when a strip about two inches wide is left between the saw and the notch, the wedges are forced in a little. At this time the sawing is done very carefully. If the greater weight of trunk and branches is on one side, more wedges are placed on that side and less sawing is done on the opposite side. Thus, the wedges on that heavy side help to take the weight and by holding a little extra unsawed strip on the opposite side from the weight, the tree is prevented from falling where it would otherwise be likely to go. We space the wedges about six inches apart so that it is convenient to hit one at a time with the beetle. Under all conditions the unsawed section, especially opposite the heavier side must be kept at least an inch across. By watching the wind and the swinging of the tree, the wedges can be made to force the tree into the direction we wish to have it go. Before the tree falls we place a short log about six feet from the tree. Then as the tree falls, the butt end will be supported above ground. This prevents the butt from settling into the mud and from becoming frozen fast. Furthermore, when the log is supported a few inches above ground, it is much easier to get the loading skids in place and the log chains can be put around the log with ease. We find it convenient to trim a tree as soon as possible after it is felled. The side branches are

cut off close to the trunk and with the surface of the cuts quite smooth to the saw log.

The log gets smaller the farther we get from the stump. Therefore, it is folly to try to get the saw log too long. The sawyer has to square the log according to the size of the upper end. That is why we lose if we try to gain unwisely. The topwood of the tree is cut into lengths convenient to take it to the woodpile there to be cut into fire wood with the power saw. The time to burn the brush is while you are on the job. Otherwise it may remain an emblem of "good intentions" or neglect.

By having the logs ready to load, we can watch for good sleighing to slip them to the mill on the heavy logging sleds. It is very easy to load logs on a low down sled but it requires more time and power to load onto wagon sand to have the logs on wheels over the soft soil in the woods.

SOLVING MUCK LAND PROBLEMS

The annual field day of the growers of vegetable crops on muck lands in central and western New York was held at Williamson, Wayne County, Sept. 6. Williamson is the center of an extensive vegetable growing industry, the principal crops being lettuce, celery and onions.

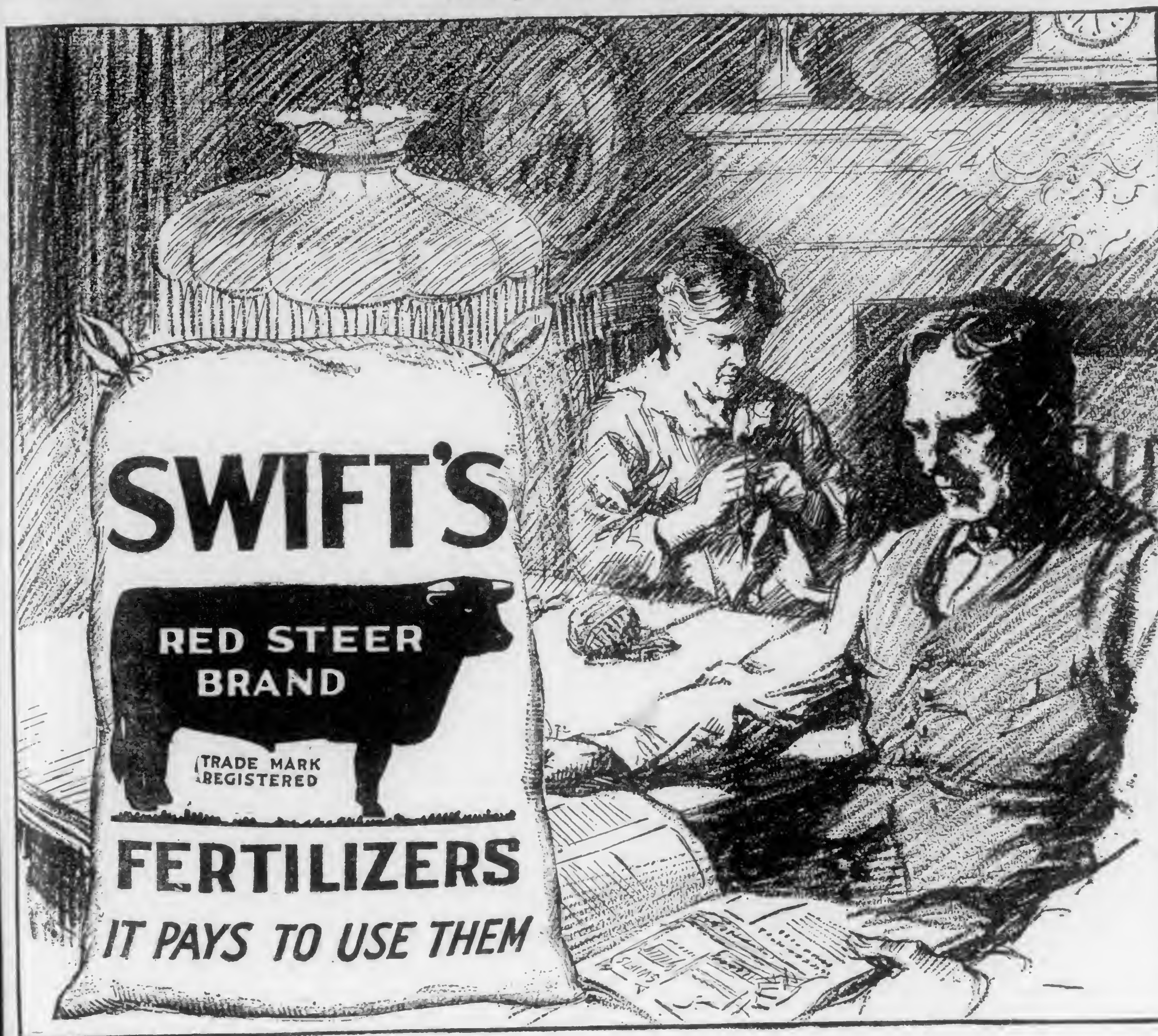
Under the direction of the Williamson Vegetable Association in co-operation with the country farm bureau visits were made to several large tracts of muck land to inspect a number of demonstrations that are being carried on by H. W. Dye, plant pathologist, who is employed by the Williamson growers in connection with the State College of Agriculture to investigate muck land crop diseases and discover means for their control.

On one of the farms Mr. Dye gave a practical demonstration of the effectiveness of formaldehyde in the control of onion smut. In one field test the plot treated with formaldehyde yielded 253 bushels of onions, the check plot yielded 98 bushels per acre. In another test there was 30 per cent of smut in the untreated plot and four per cent in the treated plot. The yield was 656 bushels of onions per acre on the treated plot and 356 bushels per acre on the plot where no formaldehyde was used.

In the field where these tests were made there have been no onions grown in nine years until the present season, yet it is infested with smut, showing that crop rotation is of little value in reducing the amount of smut in a field.

The formaldehyde solution was applied in the furrow with the seed at the time of sowing. The solution used is made by adding one pint of commercial formaldehyde to 16 gallons of water. This solution is applied at the rate of 200 gallons per acre. The application is made by means of a watering device attached to the drill.

A demonstration in a large field of celery on the control of celery blight showed a 95 per cent increase in the crop treated with Bordeaux mixture, as compared with the untreated plot. Another field of celery was visited, in which the varieties were badly mixed owing to unreliable, untested seed. The loss to the grower from this seed will amount to several hundred dollars. It was recommended that the growers procure their seed one year ahead of the time of planting, test it as to variety purity, and destroy it if badly mixed.—E. E. R.



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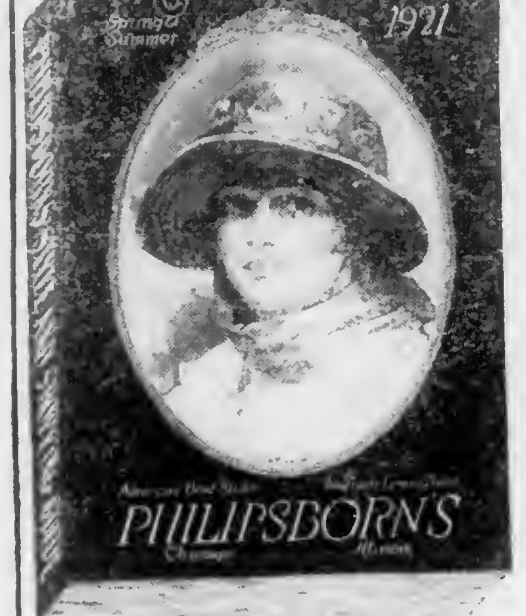
Your cost of producing a crop and our cost of manufacturing a fertilizer are comparable. You have a certain fixed expense regardless of the size of the crop and we have a certain fixed expense regardless of the analysis of the fertilizer. When we increase the amount of plant food in a ton of fertilizer the extra plant food is free of expense for bags, freight and labor and you get the advantage of our saving.

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Of Interest to Farm Women and Girls

Why Not Use More Graham Flour?

GRAHAM flour is not used in most people's everyday cooking nearly so much as it deserves to be. Practically every one who comes to our house seems fond of it, particularly our guests from the city. It can be served in such a variety of appetizing ways. I shall give further information on some of the favorite ways in our family.

Those not accustomed to its use should understand that there is a difference between graham and whole wheat flour. Graham is the wheat ground into flour with nothing removed, but whole wheat flour as sold on the market today has had the coarser flakes of bran sifted out. Both flours can be used interchangeably in all the following recipes, but constant use of them for years has proven to us that graham is preferable, especially when used as a breakfast mush. It has a lighter, more flaky appearance and does not lump so easily as the whole wheat flour. (Editor's Note.—And since there are more vitamins, which our systems need to keep our vitality up to prime, in the bran of cereals, it stands to reason that the bran of the graham flour is very desirable in the diet for this reason, as well as to produce bulk in the food to maintain good intestinal action).

Both flours can be purchased at any good grocery or bakery store in our section. One manufacturer makes a specialty of graham from spring wheat flour, but we have had better satisfaction in the use of graham made from our own winter wheat, which we get ground at our local grist mill. Be careful that your wheat is free from cockle, else when the wheat is ground those black hulls of the cockle will show prominently.

Perhaps the most popular way of using graham is in brown bread.

Good Brown Bread

Make a sponge of white flour as for white bread, and stiffen with graham instead of white flour, making the dough a little softer than for white bread. Bake thoroughly for 1½ hours; this is none too long for an ordinary-sized loaf. Rub a little butter over the top of the loaves when you remove them from the oven, and cool before putting away. This bread should keep a week in good condition (if you do not eat it before then), especially if mashed potato is used in the sponge. It should be soft and crumbly in texture, and will be medium light in color if part white flour is used in the making of the dough.

Breakfast Graham Mush

As a breakfast food graham flour is the cheapest material on the market, and graham mush is not only delicious but is quickly and easily made. Stir the dry flour slowly into boiling salted water, and cook in a double boiler for an hour and a half or in the fireless cooker over night. It should be a smooth mush, and not too thick. Serve with cream and sugar—brown sugar occasionally. When cold it makes an enjoyable dessert for supper.

Graham Cookies

These are enjoyed by both chil-

dren and grown-ups. They will keep for a good while in a tight box or crock. We depend on them for a constant standby to be used as cake, dessert, afternoon refreshments or impromptu lunches.

Ingredients.—One quart graham flour, 1 egg, 6 tablespoons sugar, ½ teaspoon salt, 3 tablespoons butter, 2½ teaspoons baking powder, cinnamon and nutmeg for flavoring, and milk enough to make a soft dough.

Method.—Sift together the flour, spices, sugar and salt and baking powder, and rub in the butter. Beat up the egg, and add with the milk, mixing them in lightly. Roll out, sprinkle with granulated sugar and roll out again. Cut out and bake in a hot oven for 10 minutes. They must be thoroughly baked, for it is the browned and thoroughly done graham flour that gives them the extra good flavor.

Graham Muffins

Ingredients.—One pint graham flour, 1 pint white flour, a scant ½ cup of melted lard, ½ teaspoon salt, 1 tablespoon sugar, 3 eggs, 1 pint milk, 3 tablespoons baking powder.

Mix well and bake in a hot oven until well browned.

Graham Griddle Cakes

Beat 1 egg, mix with 1 cup milk, add 1 cup graham flour in which you have sifted 1 teaspoon sugar and ½ teaspoon salt and 1 teaspoon baking powder.

Steamed Graham Pudding

Rub ½ cup butter into 1½ cups of graham flour, into which you have sifted ½ teaspoon soda and ½ teaspoon salt. Add 1 egg, ½ cup molasses and ½ cup milk, and then add raisins, dates, dried or candied pears or cherries to the batter, and steam in a buttered mold or in cups for 2½ hours. Serve with cream and honey.

Graham Apple Pudding

Butter a baking dish, slice in some apples and sprinkle with sugar and cinnamon. Make a batter of ½ cup sugar, butter the size of a medium egg, ½ cup milk, 1 egg, graham flour enough to stiffen to ordinary cake consistency, with 1 teaspoon baking powder sifted into the flour. Season with 1 teaspoon vanilla. Pour this batter over the apples and bake in a moderate oven until cake is done and appears soft.

These recipes are similar to those in which white flour would be used, except that with graham one has to use a little more moisture.—Elinor S. Brinton, Chester Co., Pa.

KEEPING CHILDREN BUSY

I am a reader of the Pennsylvania Farmer, and am very much interested in the Household Page, especially what mothers write. I am a mother of three children, the oldest a school boy of eight years, the next a girl who will be five in April, and a 16-month-old baby boy. So I have many problems to solve as have all mothers.

I will give a few ways how I interest my little ones. The school boy and the little girl can both draw well so I see to it that I am not too

busy to praise them when they show me what they draw which makes them more interested and they spend many hours drawing and coloring. Not all children are good at drawing, but if mothers will take a little time and draw something and tell them to try and make it as near like the one you made as they can. Give them a pencil and paper and let them try it. It will take a little time to get them interested but it will pay, and it will teach them to write nicely, can write well.

When you tear a page from a calendar, give it to the little ones, they will always be glad for it. They can draw on it and learn the numbers also. An old catalog will interest them if you let them color the pictures. Take a little time to show them how some of the pictures might be colored and tell them to try and not get over the lines. After they have been at it a while they can do it real well, then praise them for it. If there are several small children, get them to see which one can draw the best, and they will all try hard. Sometimes my little girl gets a notion she cannot draw some of the pictures in her drawing book, then I say to her: "Oh, yes you can, try it once, make it as good as you can." Then she will try, and when she has it finished she shows it to me and says, "Mamma, look I made it." Then I tell her she can do it if she tries.

My baby does not walk alone yet, if he is on the floor he crawls and that makes him so dirty but the cold floor is what worries me most, so I have him on the rocking chair or couch most of the time and give him a book to look at the pictures. I taught him to turn the pages and look at the pictures, telling him not to tear it, and he looks at it long before he begins to tear it. When he begins to tear it the little girl gives him a doll or some other plaything for a change.—Mrs. I. B. W., Lanc. Co., Pa.

MADE WITH SOUR MILK

In our home cooking we use sour cream to make many delicious things. In fact, if I should have to live in the city I would be lost without it. She is a most careless cook who fails in recipes that call for cream that has "turned," for every one of the recipes below are easily made and turn out tasty and good.

Even ice-cream, delicious and sweet, can be made from sour cream if a scant teaspoon of soda is added to each pint of cream, and then the ice cream is made as usual.

Virginia Cookies

Two cups sugar, 2 eggs, ½ cup butter and lard mixed, ½ teaspoon soda stirred into the cream, 1 level teaspoon ground mace, and flour enough to roll out. Sprinkle the top with granulated sugar before cutting cookies.

Sugar Cakes

One pound white sugar, 3 eggs, 6 ounces butter, 1 teaspoon soda dissolved in 1 cup sour cream, and flour enough to make a soft dough. Flavor to taste. Add granulated sugar to rolled dough before cutting out.

Salad Dressing

Two eggs, 1 tablespoon butter, one tablespoon flour, 1 teaspoon each of salt and mustard, 2 tablespoons sugar, ½ cup vinegar and 1 cup sour cream.

Cream the flour and butter together, mix into this all the dry ingredients. Tip the pan to one side and

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To have this book in your home is to have a price standard, a standard of values. To study it is to know the new styles and the new prices—the lowest prices for Spring.

Economize on Your Spring Clothes

Economize by getting better quality, "NATIONAL" time-tried quality—at lowest prices. Prices are now down to the level that they were some years ago and the quality of "NATIONAL" goods is pre-war quality always.

Here Are the New Prices—The Lowest Prices

Silk Taffeta Dresses last Spring were from \$21.98 to \$54.50. This Spring's prices are from \$11.98 to \$25.00.

Women's All-Wool Coats—Last Spring's prices were \$18.98 to \$67.50. This Spring's prices are \$9.98 to \$32.50.

Georgette Waists that last year were from \$6.98 to \$21.50 are this year from \$3.25 to \$10.95. We also have a complete selection of other beautiful waists at from 98¢ to \$5.98.

These are but examples of the many "NATIONAL" new prices you should know, no matter where you buy. The "NATIONAL" Money-Saving Style Book is filled with just such prices—and always it is the standard, it tells you how much you should pay for whatever you buy.

It is a book filled with all the new beauty in women's fashions for Spring—the interesting, profitable, Money-Saving "NATIONAL" Style Book, and one copy is yours free—just for the asking. Don't you at least miss its pleasure and advantage. Write for your free copy today.

National Cloak and Suit Company, 212 West 24th Street, New York City

Better Home Heating at Less Cost

There is no reason why your house should not be as warm and comfortable as hundreds of others. Their owners have found that with less fuel than their stoves were burning, they could keep every room at a uniform temperature.

Now, instead of over-heated sitting or dining rooms and cold bedrooms and halls, all doors can be left open and in every room there is pleasant warmth.

You, too, can change to such warm comfort in a day and save many dollars yearly on your coal bill. A New Idea Pipeless Furnace will do this for you. Our money-back written guarantee protects you absolutely. A New Idea costs little more than a good stove, for lower prices again prevail.

Ask the New Idea dealer near you to explain the many advantages of the New Idea Furnace. If you don't know him, write us, and we will send his name. Expert heating advice free to you.

UTICA HEATING COMPANY
Box No. 80, UTICA, N. Y.

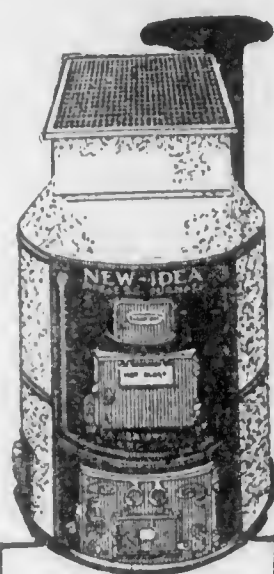
Also manufacturers of "Superior" Pipe Furnaces and "Imperial" Steam and Hot Water Boilers.

NEW-IDEA Pipeless Furnace

"The one you've heard so much about"

Excellent proportion for hard-wood and soft-wood stoves.

21-6



Advantages of the New Idea

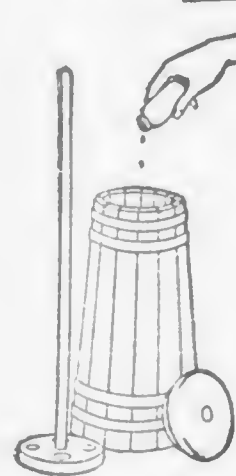
Frameless Feed Door Cup-Joint Construction.

Hot Blast Feed Door Gas and Dust-tight Radiator.

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Add a half-teaspoonful to each gallon of winter cream and out of your churn comes butter of golden June shade to bring you top prices.

DANDELION Butter Color

All stores sell 35-cent bottles, each sufficient to keep that rich, "Golden Shade" in your butter all

the year round. Standard Butter Color for fifty years. Purely vegetable. Meets all food laws, State and National. Used by all large creameries. Will not color the buttermilk. Tasteless. Wells & Richardson Co., Burlington, Vermont.

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Why buy new rugs at prevailing high prices when you can have your old Brussels and Ingrain carpets made into beautiful and durable rugs? Consistent to your undivided satisfaction. We use the transportation charges one way, send for our latest circular and price list. In business for twenty-five years.

HAYES & SON
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263 N. Fifth St., Columbus, O.

PLEASE say: "I saw you in Pennsylvania Farmer."



Then It's Genuine

Unless you see the name "Bayer" on tablets, you are not getting genuine Aspirin prescribed by physicians for 21 years and proved safe by millions. Always say "Bayer."

Aspirin is the trade mark of Bayer Manufacturing of Monastereimunder Salzburg.

CROCHETERS

on booties and afghan stitch sacques. Good prices. Send sample.

S. Augstein & Co.
352 Fourth Avenue New York City

beat the eggs until the yolks are well mixed with the whites, then stir them into the rest of the mixture. Add the vinegar, place on stove and stir all the time until the dressing is thick. When cold stir in 1 scant cup of sour cream.

Feather Cake

One cup rather thick sour cream, 1 cup sugar, 2 cups sifted flour, 1 egg, 1 teaspoon salt, 1 level teaspoon soda dissolved in a little water, 1 teaspoon vanilla, 1 teaspoon baking powder.

Plain Fruit Cake

One cup sour cream, 1 cup brown sugar, 1 cup molasses, 3 cups flour, 1 cup raisins, 1 cup chopped walnuts, spice to taste, 1 teaspoon soda in 1 tablespoon hot water, 1 teaspoon salt and 1 egg.

Quick Cream Cookies

One cup sour cream, 1 cup sugar, 1 egg, 2 1/2 cups flour, 1 level teaspoon each of soda and salt; flavor. Drop with teaspoon on well-buttered tins. pat down and sprinkle sugar on each. Also put one-half nut meat on each.

Gingerbread

Three-fourth cup of thick sour cream, 1/2 cup molasses, 1/2 cup sugar, 2 cups flour, 2 eggs, 1 rounding teaspoon soda, 1 tablespoon ginger, 1 teaspoon each of cinnamon and lemon extract, and 1/2 teaspoon salt. Bake in gem pans, and frost with confectioner's sugar frosting.

Cream Biscuits

One quart flour with 1 teaspoon each of salt, soda and baking powder sifted in well; then add 2 large tablespoons thick sour cream to the milk used in wetting; mix, handle lightly and bake in hot oven.

Sour Cream Pie

One cup sour cream, 2 cups sweet milk, 1 cup sugar, 1/2 cup chopped raisins, 1 1/2 tablespoons vinegar, 1 tablespoon flour, 1 teaspoon cinnamon, yolks of 2 eggs and a little salt. Bake in one crust. Use the whites for a meringue, sweetened with 4 tablespoons sugar; brown in oven.

Deviled Eggs

Boil 6 eggs hard, cut in halves lengthwise, remove the yolks and mash with a fork, adding enough thick sour cream to moisten. Add mixed mustard, salt and a little red pepper. If the cream is too sweet, add a dash of lemon juice. Put the powdered yolks thus seasoned back into the whites.

Cream Horseradish Sauce

Beat 1/2 cup thick sour cream, add a little salt and sugar, and beat in 1/2 cup grated horseradish. Serve with cold ham.

Layer Nut Cake

One-half cup rich sour cream, 1 cup sugar, 2 cups flour (measured before sifting), 2 eggs, 1/2 teaspoon each of salt and soda, one teaspoon baking powder; flavor with vanilla. Bake in three layers. Use nut filling.

Johnnycake

One tablespoon butter, 2 tablespoons sugar, 1/2 teaspoon salt, 1 egg, 1 cup sour cream, 1 cup cornmeal, 1 cup flour, 1 teaspoon of soda.—Mrs. Elizabeth O. Jean, Baltimore Co., Md.

Possibly not enough vegetables in the diet. The children should eat them too.

PENNSYLVANIA FARMER PATTERNS

Give figures and letters of each pattern exactly as printed at beginning of each description or we will not be responsible for correct fitting of orders. Give bust measure when ordering waist patterns, waist measure for skirt, and age for children's patterns. Address Pennsylvania Farmer, 261 S. Third Street, Philadelphia, Pa.

3095.—Cape and Muff.—There will be many raw days yet this season when such a set will be appreciated. The pattern comprises a muff cut in one size, and a cape cut in 3 sizes: Small, 32-34; medium, 36-38; and large, 40-42 inches bust measure. Fur, plush, velvet or corduroy are good materials. Fur and velvet or satin may be combined. The collar may be rolled high or low. To make the cape for a medium size will require 2 1/2 yards of 44-inch material. The muff requires 1/2 yard of 30-inch material for the outside and 1 1/2 yard for all inside sections and stays. Pattern, 10 cents.



3234.—Play Apron.—The pattern comes in 5 sizes, 1, 2, 3, 4 and 5 years. A 4-year size will require 1 1/2 yard of 36-inch material. As illustrated, the apron is made of white cambric, with stitching in red cotton. The pockets are "cut out motifs," finished and applied to the apron with stitching; the upper edge is left free to form the pocket opening. Pattern costs 10 cents.

3397.—Isn't It Pretty?—This design is suitable for slender women and misses. The pattern is cut in 3 sizes: 16, 18 and 20 years. A 16-year size will require 5 1/2 yards of 40-inch material. Bordered serge, and other wools, plaid and check suitings, tricotine and gabardine are attractive for this style. The width of the skirt at lower edge is 1 1/2 yard. Pattern, 10 cents.



3487.—Girl's "Gym" Suit.—This suit makes not only a good garment for gymnasium practice but is good for the foundation of a bloomer suit. The pattern comes in 5 sizes: 6, 8, 10, 12 and 14 years. A 10-year size will require 3 1/2 yards of 44-inch material. Serge, repp, poplin, gabardine, saten and jersey cloth are good materials for this style. Pattern, 10 cents.

A Health Hint

When the wind blows so hard that it seems impossible to put the bedroom window up, wrap a window screen in a cotton cloth and use it to keep out the draft, but not the air. Better still, cover a screen with cheesecloth and have it always ready to use.



The "U. S." Bootee

The protection of a boot—the comfort of a shoe

A miner's rubber shoe that is becoming popular among farmers everywhere

IN wet weather—over muddy ground—you can keep your feet as dry as in boots, and yet have all the light-weight comfort of a shoe.

Farmers everywhere are buying the new U. S. Bootee—a water-tight rubber shoe that is just the thing for everyday service around the farm.

It was first designed for miners, who must have a waterproof shoe that will not tire their feet. Today it's fast becoming popular all over the country—with all men who have to work much out-of-doors. Worn right over the sock like a leather shoe, the U. S. Bootee gives perfect protection always—whatever job you have to do. Its light weight and its smooth, easy fit will give you a new idea of real comfort in rubber footwear.

Ask your dealer to show you a pair of the new U. S. Bootees. Note their smooth rubber surface—feel how pliable and comfortable they are. They have the same built-to-wear construction which character-

izes the whole U. S. line of rubber footwear.

Other types of "U. S." Footwear—built for rough service

The U. S. line of footwear has a type for every need—arctics, rubbers, "overs"—all built in the same, rugged, reliable way.

They all have tough, heavy soles—special reinforcements at every point where the wear is hardest—and the highest quality rubber from our own plantations.

Ask your dealer to show you his U. S. line. Pick out the models best suited to the work you do. Every one has been designed by experts—every one is backed by over half a century of experience.

Always look for the "U. S." Seal—it means solid wear and long service for your money.



"U. S." Boots—Reinforced where the wear is hardest. Made in all sizes and styles—Hip, Half-hip, and Knee. In red, black, and white.

United States Rubber Company

Look for this seal



on all "U.S." Footwear

Everything for the Modern Farm and Dairy

The Modern Hover

The Reliable Blue Flame Wickless, Oil-Heated Colony Hover



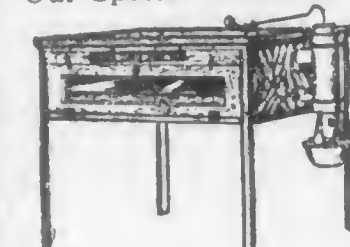
This hover has the same chick capacity as the coal-burning brooder. A few of the special points on this oil-heated hover are as follows:

Burns Coal Oil. Steady Blue Flame. Safe and Convenient. No Wick to Trim. Abundance of Heat. Visible Oil Feed.

The Modern Hover 30, 42 & 52 Inch Hovers

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Our Special Incubator



An exceptionally good machine at an extremely moderate price.

Reliable Incubators

Come in all sizes from the Baby Grand of 50 Egg Capacity for family use, to Standards of 250, 350 and 450 Egg Capacity and Giant Wonders, of 650 and 1000 Egg Capacity. Made in both hot air and hot water styles. The best values upon the market today. Let us prove this to you.

Write for Special Catalogs

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Dairymens Supply Co.

PHILADELPHIA, PA.

BELL PHONE LOCUST 1018 LOCUST 2057 KEYSTONE PHONE, RACE 1568

Detroit Incubator \$12.45

100-Egg Size—Guaranteed—has double walls, copper tank, full-size thermometer held so that chicks cannot break it when hatching. Detroit Brooders, 100, Double walled, hot water heated. Write for special low price on both machines. Detroit Incubator Co. Dept. 13 Merritt St., Detroit, Mich.

BETTER CHICKS!

Thoroughbred, range raised quality chicks, with vim and pep, bred for heavy egg production. Anconas, Black Minorcas, \$25 per 100; Barred Rocks, R. I. Reds, \$24 per 100; White, Brown, Buff, Leghorns, \$22 per 100. We special delivery parcels post prepaid, 100% live delivery guaranteed. 25 per cent. will book order for any date. SHERIDAN FARMS, Sheridan, Pa.

Gloves at Cost

BIG UNLOADING SALE One dozen pair genuine heavily made work and durable Canvas Gloves, heavily soiled, \$1.95 each pair, and special for cash only. Write for terms. Write for terms. Write for terms. FARMERS GLOVE CO. DEPT. 20 INDIANAPOLIS, INDIANA

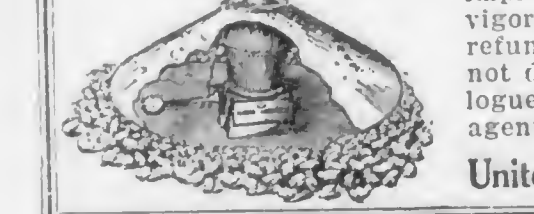
Attention Farmers

After 20 years' experience of top making, we have perfected a top complete with curtains for your farm tractor. This is our own patent and invention. Write us for illustrated circular and prices. Also manufacturers of motorcycle and boat tops, auto tops, main, tops, seat covers, roofs and back curtains, cushions, tractor field covers. Atlantic Auto & Body Co., Brooklyn, N.Y.

HAY

Ship to the Old Reliable House DANIEL McCAFFREY'S SONS 623-25 Wabash Bldg., Pittsburgh, Pa.

The Magic Brooder



United Brooders Co., 303 Pennington Avenue TRENTON, N. J.

Feed F. P. C. Chick Manna First

It takes the place of the bugs, seed, worms and grit that the mother bird instinctively scratches. It contains the same natural elements that cause baby chicks, turkeys and pheasants to thrive and grow.

It is specially prepared to carry the chicks over the first ten days. F. P. C. Chick Manna will avoid bowel disorders that are caused by feeding coarse grains or sticky mixtures that soon ruin the chick's delicate digestive system.

F. P. C. has proven itself dependable year after year since 1884. Get it from your dealer or write to us. Satisfaction guaranteed or money refunded. Information on prevention of poultry losses sent free on request.

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POULTRY

Comfortable Flocks Pay Best

THE laying hen is a creature of habit, and anything which disturbs her everyday life has a bad effect on the egg yield. The other day a neighbor came to see my flock and to talk over poultry matters. He was accompanied by his dog, and the latter succeeded in making his way into the poultry pens along with us. Instantly the hens were aroused and dropped their everyday duties to scold and chatter about the intruder. It may seem like a very little thing to my neighbor—but there was a dropping off in egg production in the pens we visited that became noticeable for a few days.

I never allow dogs to enter my poultry yard and take all possible precautions to keep the hens from getting excited. A quiet, peaceful existence for the hens has its results in the egg yield. It pays to keep the flock gentle and comfortable at all times, particularly when a maximum yield of eggs is desired.

The laying houses are cheerful as they can be made with a minimum of sunshine. It is during this part of the year that the effect of climatic conditions is particularly noticeable on the layers after several months' confinement in winter quarters. Thus far we have had a very open winter for Berks County, although the sunny days have been few. I try to arrange my winter quarters for the hens so that the greatest possible amount of sunshine can enter during the short days of the year.

It is at this time that sunshine acts as a tonic to the hens. They like to stand around in it when they are not busy at the feeding trough or the scratch feed. Sunshine will keep the litter dry, an essential to good health when the flock is in winter quarters.

Watch the litter at all times. If a busy hen can bury herself in nice, clean straw and find there sweet and wholesome grains, and when she looks up the sun and light warm her, it will not be long before she will begin to lay, and keep on laying. Any tendency to dampness on the floor should be checked at once, for the hen spends most of her time during the day there. A few wood shavings scattered among the straw will make the litter dryer.

I use a good whitewash on the interior of the hens' quarters once or twice each winter, depending upon the time I have and the severity of the winter. I make the whitewash at home by using five parts of cream of lime. By cream of lime is meant fresh stone lime slaked with boiling water and diluted to the consistency of thick cream. I add one part of kerosene and one-half part of some good disinfectant, then dilute the mixture to the consistency desired. A tablespoonful of washing blue is added to give it a white appearance, and glue may be added to aid in sticking.

One of the little things which many farmers neglect in the winter is the water supply. Few farmers appear to know that an egg is about 60 per cent water, or if they do know, seem to think the hen is something like a camel and can secrete its water supply somewhere about her body. I have carried water for a flock of thirsty hens until I have come to the conclusion that an egg must be 99 per cent water. Clean, fresh water must be before the birds at all times. When filling I always pour out the old water, wash the pan, and fill with clean, sparkling water. I would not be afraid to drink myself. Stale water is filthy and liable to become contaminated. I have known of disease to lurk in the water fountains and pans.

Keeping the hens busy, comfortable and contented will go a great ways toward solving the problem of getting eggs in midwinter.—A. J. Bradley, Berks Co., Pa.

FEBRUARY POULTRY ITEMS

Vigor is the foundation of success with poultry. If the breeding cockerels have not come thru the winter in good condition it will pay to look around and make a last minute effort to pick up some good ones. The extra money spent for the birds will more than be returned in the increased value of the chicks.

Remember that incubators have been known to start fires. Inspect the machine thoroly before starting and see if the flues have become clogged with dust. One fire was caused by a mouse building a nest of rubbish in the hot air flue. Fortunately it was located in time. A careful adjustment of the lamp is the best prevention of overheating. Have the thermostat regulated so that the lamp does not have to burn its hottest to keep the egg chamber up to 103 degrees.

The early hatches take time and work but we find that the best hens aer laying before the fine days of spring and we wish to incubate as many as possible of their eggs. Later in the spring many of the best hens wish to set. The early chicks have more of the fine spring days in which to accumulate growth. Spring conditions with the tender green growth and worms and newly hatched bugs is conducive to the rapid development of bird life. It is necessary to start the incubator early in order to take advantage of such conditions.

We find from experience that the early hatched birds are worth starting as a cash proposition. The broilers bring more money in the season. The breeding cockerels are ready for sale early in the season. The breeding cockerels are ready for sale early in the season. The breeding cockerels are ready for sale early in the season.

Bred-to-lay strains are becoming more popular on the farm as farmers find by experience that such birds do prove the best layers. Years ago it was only the fancier that had a chance to sell hatching eggs at high prices. Now the breeders of bred-to-lay stock are finding a large demand for their surplus hatching eggs. They may not get as much per set-

ling as some breeders do for prize winners but they do get a large number of orders. The number of settings that can be sold is just as important as the price per setting.

The best bred-to-lay flocks are now good looking birds which are quite true to type. It is not necessary to guess at the breed of a good bred-to-lay hen. Of course the finest prize winners may not be the best layers. But the best layers are often good appearing birds that make an attractive appearance on any farm. We believe it is possible to develop fine bred-to-lay flocks without breeding from a single bird that is not of a good type for the breed she represents.

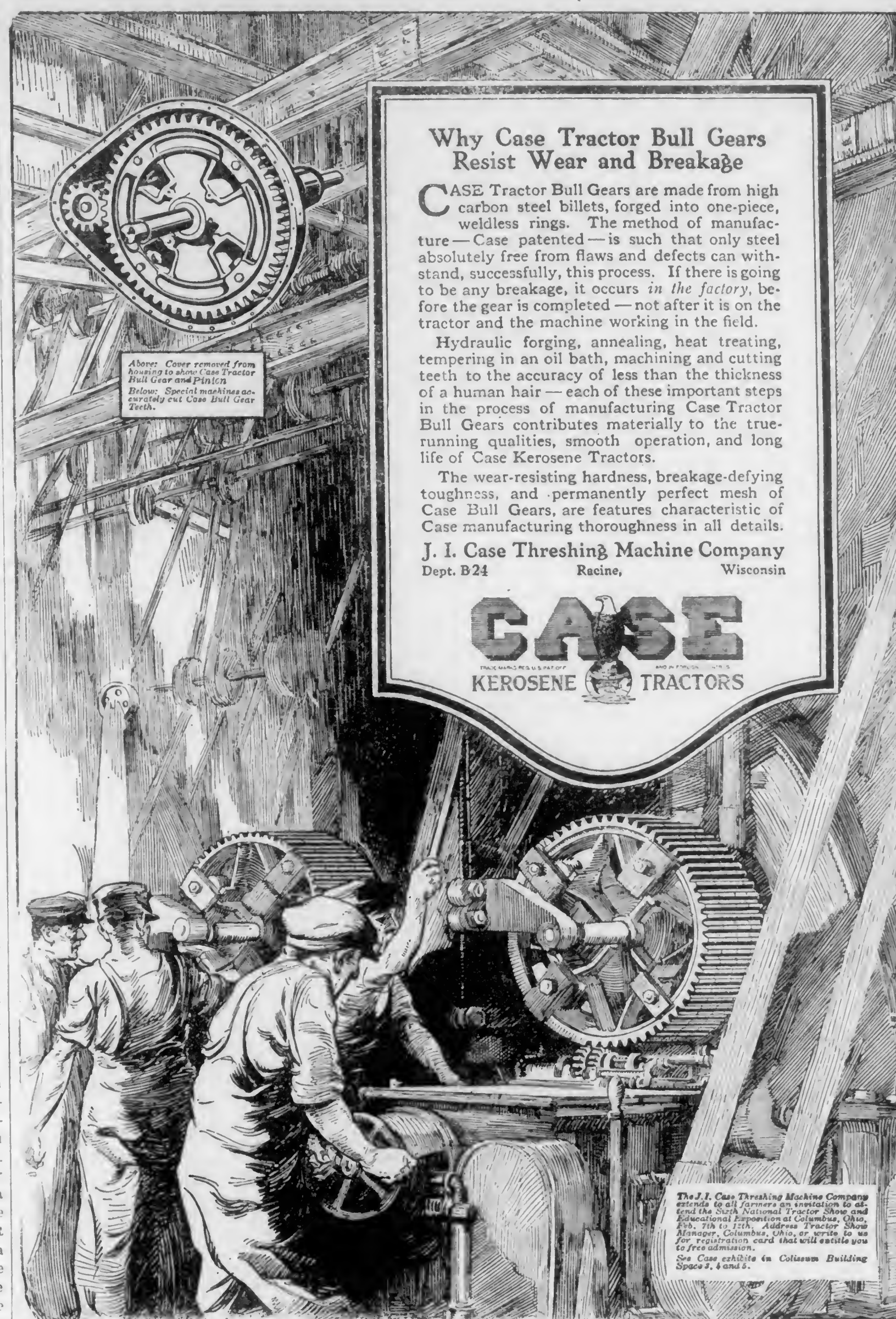
A fenced range for the poultry helps to make the business more pleasant. It keeps the hens away from the house and the flower beds. They do not roost in the barn or tool shed. They are not killed in the road by automobiles. The fenced range can often consist of a few acres of orchard which is in sod. We find that red raspberries form a shady protection on part of the poultry range. The canes make a cool shade and the foliage protects the berries so that not many will be taken if the hens have plenty of a balanced ration.

We believe it pays to keep the dust box in an outside scratching shed if possible or place it near the window and keep it closed except on sunny days. If some of the hens are always kicking and fanning the air full of dust it seems to make the conditions in the laying houses rather unhealthy. If hens are treated for lice with blue ointment we find that they do not need to be constantly dusting in order to keep healthful and free from lice. Of course that only refers to winter conditions in the house when the hens are constantly confined. At other seasons they will take all the dust baths they need outside and it will be good for them.

Second hand incubators can often be purchased at low prices from reliable parties. Buy standard machines that are still made so you can obtain a repair list from the makers. Then inspect the machines thoroly for leaks. Give the thermostat a careful examination and compare the thermometer with an instrument of known accuracy. Do not buy a warped machine that is ready for the junk pile but you can often save money on a second hand machine which has proven a good hatcher in the hands of a breeder you know. Such machines are often sold by men who are buying outfits of larger hatching capacity. They only sell the smaller units because they need larger ones, not because the smaller machines are without value.

Now is the time to study nursery catalogues and plan on ordering a few fruit trees for the poultry yards. We have observed that pears and plums seem to do the best for shade in poultry yards. They grow rapidly but do not take too much room and they will thrive in soil. Peaches need cultivation and apples grow too slowly and finally become too large. Of course an apple orchard is fine on a large poultry range although not so good in small yards.

Plant the trees far enough from the poultry houses so that the houses will not be drenched with spray when the trees are covered with spray done.—R. G. Kirby.



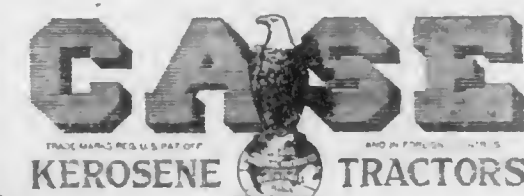
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Hydraulic forging, annealing, heat treating, tempering in an oil bath, machining and cutting teeth to the accuracy of less than the thickness of a human hair—each of these important steps in the process of manufacturing Case Tractor Bull Gears contributes materially to the true-running qualities, smooth operation, and long life of Case Kerosene Tractors.

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This 50-Egg Metal Double Wall Incubator is 18 inches in diameter, 15 inches high, fireproof and leakproof. Regulator is standard brass expansion disc type. Heat regulated uniformly. Thermometer readable through glass window. Suitable for all size flocks. Satisfaction guaranteed or your money back. Safety latched for parcel post. Send necessary postage. 32PA3021—Little Brown Hen Incubator. Weight, 15 pounds. Price \$5.95 SEARS, ROEBUCK AND CO. Box PA1 CHICAGO OR PHILADELPHIA

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Our Poultry Meat is undoubtedly the best, purest and most profitable brand of Poultry Meat offered on the market today and is recognized as such by the most successful Poultry Men. A comparison of our Poultry Meat with any other brand offered on the market today is all we ask. Put up in neat packages of 100 pounds each. If you are not using our Poultry Meat, it will pay you to do so. Write us for sample and price. Sample furnished upon request. Free of Expense. READING CHEMICAL CO., Reading, Pa.

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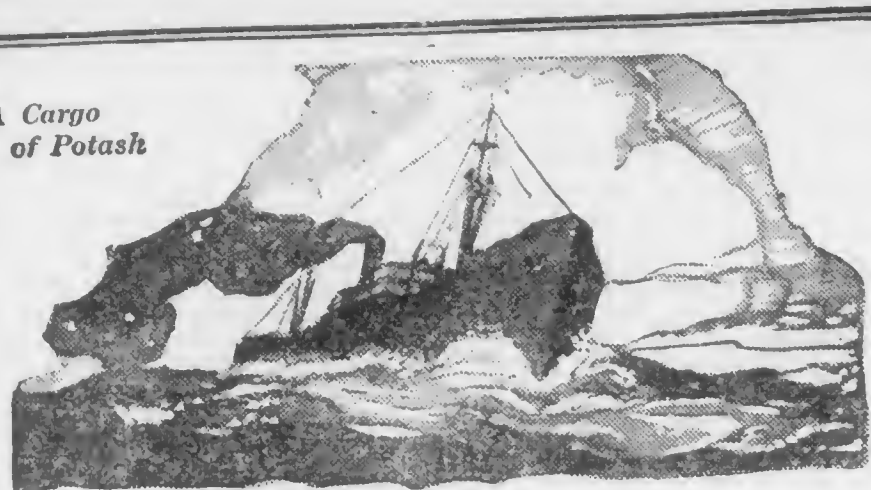
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A Cargo
of Potash

Action or Reaction

A private soldier, mustered out at the close of the Civil War, became in turn a farm hand, a tenant, a farmer of his own land, a recognized authority on farm management and farm markets, and finally Governor of a great state in the Central West. He followed always one fixed principle. He held that the time to expand activities in any direction was when others were beginning to reduce or abandon their interest in that line. He began when others quit.

As long as he lived he put his theory to the test on his own farms and his remarkable success proved its correctness.

Today many farmers are uneasy and are said to be considering giving up the use of commercial fertilizers.

For five years conditions beyond their control have brought about high fertilizer prices and made it necessary to accept fertilizers radically different in composition from those formerly in use.

Is the solution of the trouble to be found in giving up the use of things that have proved profitable in the past or in a careful consideration of the question of the purchase of fertilizers that will be as good as, or better than those formerly used?

There has been a period of Potash Starvation. Now all fertilizer materials are obtainable. Fertilizers high in Potash, 5 to 10 per cent, can be made and if you will insist on buying them you will find that

Potash Pays

—just as it did before.

SOIL AND CROP SERVICE, POTASH SYNDICATE
H. A. HUSTON, Manager
42 Broadway New York City



If you want to get your springers to market early or if you want to develop early layers you must feed your young chicks *Ubiko* with properly balanced, easily digested, nourishing food. *Ubiko* Buttermilk Growing Mash contains everything needed by the young chick for rapid and healthy growth. It builds big frames and develops feathers quickly. It is made of meat meal, bone meal, corn meal, wheat bran and middlings, ground oats, ground barley, linseed meal and dried buttermilk.

It analyzes 15% protein, 3% fat, 6% fibre, 10% ash. Note carefully 5 important things about this ration: (1) Protein is of the right kind, mainly from meat and milk. (2) Fibre very low insuring highest digestibility. (3) Buttermilk added to aid digestion and prevent disease. (4) Ash is phosphate of lime from sterilized bone meal. (5) Great variety of ingredients, very palatable.

Get a supply of *Ubiko* Buttermilk Growing Mash today and insure the health of your chicks. Time is money. Save time in the development of your chicks and you will make money.

Send for samples and prices

THE UBIKO MILLING CO., Dept. P Cincinnati, Ohio



Get My Low Prices of fruit trees, grape vines and small fruit plants. It will save you money. Feather's Nurseries, 215 100. FEATHER'S NURSERIES, Baroda, Mich.

New York Horticultural Meeting

THE sixty-sixth annual meeting of the New York State Horticultural Society, held at Exposition Park, Rochester, showed that the society which a few months ago gave symptoms of disintegration, is still a strong, virile organization with a large and active membership and a goodly balance in the treasury. The past season was one to try the temper of both large and small growers and few men connected with the industry ever saw such a general merging of menacing conditions which seemingly hit the industry from every angle conceivable.

However, the Rochester show carried a high note of optimism and more confident than ever are the growers that with a return of sane conditions fruit growing will again take its place as the leading interest of farmers in the great fruit belt of the state.

The attendance ranked well with other years while the exhibits of machinery, equipment and fruit was greater than that ever shown before under auspices of the society.

One of the pivots of interest came up in the report of E. H. Anderson, of Rochester, chairman of the transportation committee. The matter of adequate transportation has likely caused more dissatisfaction and annoyance to the growers than any other one thing outside of the low price of fruit during the past season. The car shortage has been a real thorn in the flesh. In part Mr. Anderson's report reads:

"We believe all will agree with us when we say that agriculture and transportation are the two fundamental industries of the country and that they are interdependent. One cannot thrive without the other; therefore, increased production means increased tonnage and increased tonnage means improved transportation service. We believe that much can be done to develop automobile trucks for hauling freight short distances, but the bulk of the perishables produced in New York state must depend upon railroad transportation to reach the markets."

One of the new phases of association work this year was announced in the arrangements made with a large chemical company thru the Grange-League-Federation Exchange, whereby from thirty to forty carloads of lime-sulphur will be available to the growers in their fight on insects and plant diseases. This spraying material will be handled thru local branches at a price which will be announced in a short time.

While the machinery obtained more space than ever in the exhibit this year, the fruit exhibit was about the same as last year, except that the fruit was of much better quality. Between 50 and 75 varieties of choice boxed apples formed a vast color scheme of red, green and yellow, along one side of the wall in the building given over to fruit displays. Among them were Sweet Winesaps, Holland Winters, Esopus, Greenings, Romes, Enscos, Crow Eggs, Jonathans and Black Gilliflowers, an old variety.

The exhibit of the State Experiment Station at Geneva, always a point of great interest, was exceptionally so this year. Here were a number of hybrid apples: The Westchester, a cross between the Ben Davis and the Green Newtown; the Cortland, believed to be the most successful cross, a Ben Davis and McIntosh, which gives it most of the

McIntosh qualities added to the Ben Davis-keeping qualities.

While New York's apple crop in 1920 was nearly four times as large as the year before, the financial return to the grower was only one-fourth greater, the value of the crop being \$41,727,500 which was only \$8,000,000 more than last year, but the size of the crop was 38,850,000 bushels greater than the year before.

According to report, the total crop in New York state in 1920 amounted to 55,650,000 bushels, which was more than 23 per cent of the total apple yield of the United States and exceeded the total yield of all the states west of the Mississippi river by 5,100,000 bushels. This excess was greater than the total yield of all the New England states except Maine. In taking up the money side of the crop, President Wellman said:

"The average city person thinks that the growers of food products are profiteering and getting rich at the expense of the city consumer. Here are some figures on the cost of producing apples during 1920 as compiled by the State College of Agriculture thru the Farm Bureau: The cost of producing apples was about \$3.70 per barrel for Western New York and \$4 for the Hudson Valley. The grower who could not sell at a profit last fall and stored his apples, and was obliged to sell today could realize about \$3 per barrel—besides the storage. The loss the average grower would have to face on the present market would be about \$1 per barrel."

National Grange Master, Sherman J. Lowell, of Fredonia, was one of the last speakers, appearing in the place of Dr. W. H. Jordan, of the Geneva Experiment Station, who could not come for his appointment. Master Lowell said in part:

"I want to sound a note of warning. We are going mighty fast. Our organization work is splendid but I sometimes imagine that we expect too much of just mere organization. After the Civil War, 11,000 grange locals sprang up in just a few months. It was the idea that the movement was a panacea for all ills. Such organizations can spring into life in a day and they can die in half that time. In connection with this movement we must have deliberation and calm judgment. We must be fundamentally right and show reasonable wisdom in our constructive work. If we do not, twenty years will see peasant farming in the United States with all that it means to this country, which in a very essential way has been grounded and rooted in its stable farming class."

"I am impressed at this time with the thought that we are under immediate necessity of making an important decision. Are the great organizations of farms to be commodity organizations or are they to be general in their nature? Said in another way, are we separated by specific interest like wheat growers and apple growers to organize without reference to other agriculturists and press our claims, or are we to recognize our common need and that our success is dependent on moving in solidarity?"

Officers were elected for the ensuing year as follows: President, T. E. Cross, LaGrange; first vice-president, J. B. Pease, Gasport; second vice-president, P. W. Cornwall, Pultneyville; secretary-treasurer, Roy E. McPherson, LeRoy.

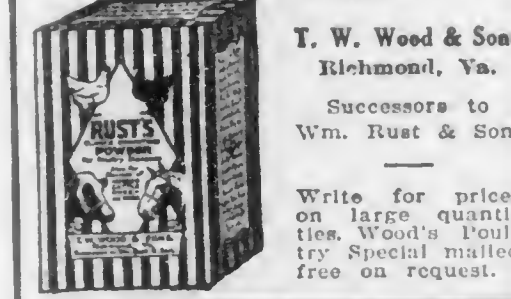
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WILD TURKEYS for sale. One pure wild Tom, 2 half wild, half wild Time and 1 half wild. Mrs. Jesse C. Lukens, Oxford, Pa.

FARM PRODUCTS SHOW

A Farm Product Show and meeting was held in the Community Building at Dimock, Susquehanna County, Pa., Thursday, Jan. 13. Although this was the first show of the kind to be held in this place, it will be an annual event hereafter. It was put on by the community and no products were exhibited except those raised in Dimock township.

There was a large attendance of women and men who were greatly interested in the new enterprise. Some exhibitors displayed as many as eight different products. There was a goodly showing of all kinds of farm grains, corn in the sheaf, broom corn, vegetables, fruits, nuts, honey, canned fruits, jellies, marmalades, and some bake stuff.

Mr. E. D. Roderick, of Dimock, was the chairman of the afternoon session and ably filled that position. The judges were J. B. R. Dickey, extension specialist in soils, fertilizers and lime, of the Penna. State College, and John From, vocational teacher of Harvard, a graduate of the State College. These men gave very interesting talks on the grains, vegetables and fruits.

These experts demonstrated how farmers should arrange their exhibits attractively, how to pick out uniform ears when showing corn, always breaking off the shank at the usual breaking point instead of cutting them off with a knife, as the appearance is much more natural and neat. The butts of the ear should not be too large.

The fact was emphasized that no vegetables or grain should be chosen for exhibition purposes unless they were good for seed; not too large nor too small, medium size always being preferred.

Miss Trittthill, domestic science teacher of Dimock High School, gave an instructive talk on canned goods, and bake stuffs.

Prof. J. A. Martin, agricultural teacher in the same school, explained how the community originated the idea of holding the farm products show, also how to improve and make it more interesting next year. During the forenoon, Prof. Martin tested milk for the dairymen of the place who cared to have a test made, thereby showing some of them some startling results. There are nearly a hundred patrons of the Dimock milk station and this test was greatly appreciated by many of them.

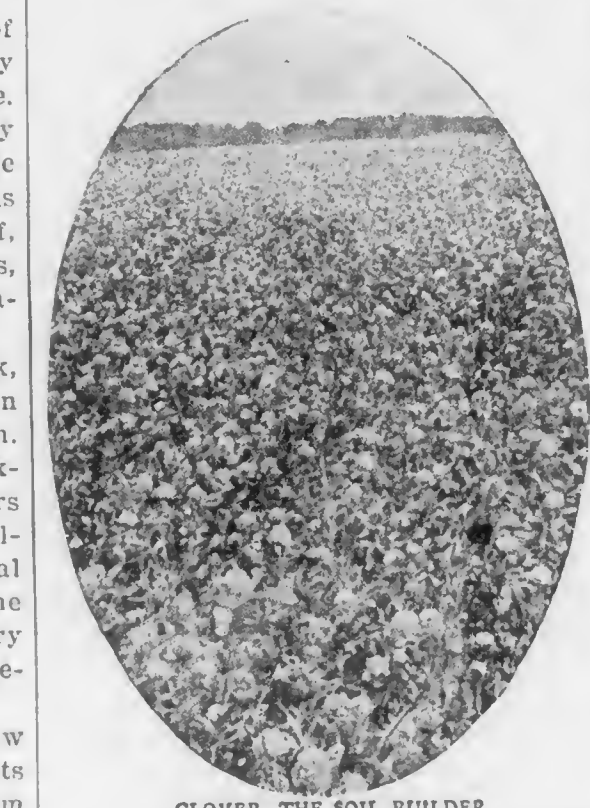
C. P. Fague, Farm Bureau agent of Susquehanna County, was the last speaker of the day. He announced that a livestock show, consisting of various educational features would be held in Dimock during the coming summer, and plans are already being made to insure the success of this undertaking.—E. M. L. R.

PERFECT POISE

Once, in that elect area known as Boston, there lived a famous artist with a charming but absent-minded wife. One summer, when the family was at a mountain hotel, the father went off painting. The mother and the children went to their rooms for the afternoon nap. Shortly, the mother came timidly downstairs, and asked if she might have a pill carried up, the clerk became disturbed. "Dear madam," he said, "is there anything wrong?"

"Well, nothing," she answered, "but—" and she looked a little distressed—"but my room is on fire."

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Seed Oats 6 kinds—one a special 'side' or 'horse-mane' variety. True to name—certified by growers and State Inspectors to be 99 1/2 % pure side oats. Yields enormously—catalog shows photo of large field that produced over 100 bu. to the acre. Grows beautiful, long head. Long, stiff straw—withstanding storm remarkably. Grain is pretty nearly all kernel—hull extremely thin—variety of greatest feeding value. Get the catalog and read more about this 'Improved Side Oats.' Other sorts offered include famous 'Shadeland Climax' from Oregon—splendid variety for use here in the East—yields heavily—grain as beautiful as any you ever saw. Other varieties are dependable croppers—ask us for samples and read full descriptions in catalog.

Seed Corn 8 distinct varieties—white—yellow—white cap—early—late—kinds for silage as well as husking. All of nearly perfect germination. Variety pictured below growing into favor faster than any other corn in Pennsylvania—wonderful producer. Endorsed by many County Farm Bureaus and Federal authorities. You should learn more about these corns through our catalog and by actual trial of the seed. Results are bound to please you.

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SYNOPSIS

Dan Failing had just received from his physician the unwelcome information that he had but six months to live. Altho descended from a long line of hardy pioneers, his life had been spent in the city where confinement in an office had destroyed the physical foundation which his forefathers had laid. He strolled out to the city park, sat on a bench where he made the acquaintance of a squirrel. The squirrel's antics awoke a latent love and appreciation for the things of Nature and he suddenly resolved to spend his last six months in the forests of the Northwest where his grandfather had lived. He acts at once upon this resolve and he is seen in the virgin forests of that great country. He is fortunate in becoming an inmate of a home owned by a man who knew and loved Dan's grandfather. A daughter, nicknamed Snowbird, is also a member of the family.

CHAPTER VI

FOR two very good reasons, Dan didn't call to Cranston at once. The two reasons were that Cranston had a rifle and that Dan was unarmed. It might be extremely likely that Cranston would choose the most plausible and effective means of preventing an interruption of his crime, and by the same token, prevent word of the crime ever reaching the authorities. The rifle contained five cartridges, and only one was needed.

But the idea of backing out, unseen, never even occurred to Dan. The fire would have a tremendous headway before he could summon help. Although it was near the lookout station, every condition pointed to a disastrous fire. The brush was dry as tinder, not so heavy as to choke the wind, but yet tall enough to carry the flame into the tree tops. The stiff breeze up the ridge would certainly carry the flame for miles thru the parched Divide before help could come. In the meantime stock and lives and homes would be endangered, besides the irreparable loss of timber. There were many things that Dan might do, but giving up was not one of them.

After all, he did the wisest thing. He simply came out in plain sight and unconcernedly walked down the trail toward Cranston. At the same instant, the latter struck his match.

As Dan was no longer stalking, Cranston immediately heard his step. He whirled, recognized Dan, and for one long instant in which the world seemed to have time in plenty to make a complete revolution, he stood perfectly motionless. The match flared in his dark fingers, his eyes—full of singular conjecturing—rested on Dan's face. No instant of the latter's life had ever been fraught with greater peril. He understood perfectly what was going on in Cranston's mind. The fire-brand was calmly deciding whether to shoot or whether to bluff it out. One required no more moral courage than the other. It really didn't make a great deal of difference to Cranston.

He had been born in the hills, and his spirit was the spirit of the wolf—to kill when necessary, without mercy or remorse. Besides, Dan represented, in his mind, all that Cranston hated—the law, gentleness,

the great civilized world that spread below. But in spite of it, he decided that the killing was not worth the cartridge. The other course was too easy. He did not even dream that Dan had been shadowing him and had seen his intention. He would have laughed at the idea that a "ten-derfoot" could thus walk behind him, unheard. Without concern, he scattered with his foot the little heap of kindling, and slipping his pipe into his mouth, he touched the flaring match to it. It was a wholly admirable little piece of acting, and would have deceived any one who had not seen his previous preparations. The fact that the pipe was empty mattered not one way or another. Then he walked down the trail toward Dan.

Dan stopped and lighted his own pipe. It was a curious little truce. And then he leaned back against the great, gray trunk of a fallen tree.

"Well, Cranston," he said civilly. The men had met on previous occasions, and always there had been the same invisible war between them.

"How do you do, Failing," Cranston replied. No perceptions could be so blunt as to miss the premeditated insult in the tone. He didn't speak in his own tongue at all, the short guttural "Howdy" that is the greeting of the mountain men. He pronounced all the words with an exaggerated precision, an unmistakable mockery of Dan's own tone. In his accent he threw a tone of sickly sweetness, and his inference was all too plain. He was simply calling Failing a milksop and a white-liver; just as plainly as if he had used the words. The eyes of the two men met. Cranston's lips were slightly curled in an unmistakable leer. Dan's were very straight. And in one thing at least, their eyes looked just the same. The pupils of both pairs had contracted to steel points, bright in the dark gray of the irises. Cranston's looked somewhat red; and Dan's were only hard and bright.

Dan felt himself straighten; and the color mounted somewhat higher in his brown cheeks. But he did not try to avenge the insult—yet. Cranston was still fifteen feet distant, and that was too far. A man may swing a rifle within fifteen feet. The fact that they were in no way physical equals did not even occur to him. When the insult is great enough, such consideration cannot possibly matter. Cranston was hard as steel, one hundred and seventy pounds in weight. Dan did not touch one hundred and fifty, and a deadly disease had not yet entirely relinquished its hold upon him.

"I do very well, Cranston," Dan answered in the same tone. "Wouldn't you like another match? I believe your pipe has gone out."

Very little can be said for the wisdom of this remark. It was simply human—that age-old creed to answer blow for blow and insult for insult. Of course the inference was obvious—that Dan was accusing him, by innuendo, of his late attempt at arson.

Cranston glanced up quickly, and might be that his fingers itched and

tingled about the barrel of his rifle. He knew what Dan meant. He understood perfectly that Dan had guessed his purpose on the mountain side. And the curl at his lips became more pronounced.

"What a smart little boy," he scorned. "Going to be a Sherlock Holmes when he grows up." Then he half turned and the light in his eyes blazed up. He was not leering now. The mountain men are too intense to play at insult very long. Their inherent savagery comes to the surface, and they want the warmth of blood upon their fingers. The voice became guttural. "Maybe you're a spy?" he asked. "Maybe you're one of those city rats—to come up and watch us, and then run and tell the forest service. There's two things, Failing, that I want you to know."

Dan puffed at his pipe, and his eyes looked curiously bright thru the film of smoke. "I'm not interested in hearing them," he said.

"It might pay you," Cranston went on. "One of 'em is that one man's word is good as another's in a court—and it wouldn't do you any good to run down and tell tales. A man can light his pipe on the mountain side without the courts being interested. The second thing is—just that I don't think you'd find it a healthy thing to do."

"I suppose, then, that is a threat?" "It ain't just a threat," Cranston laughed harshly—a single, grim syllable that was the most terrible sound he had yet uttered. "It's a fact. Just try it, Failing. Just make one little step in that direction. You couldn't hide behind the girl's skirts then. Why, you city sissy, I'd break you to pieces in my hands!"

Few men can make a threat without a muscular accompaniment. Its very utterance releases pent-up emotions, part of which can only pour forth in muscular expression. And anger is a primitive thing, going down to the most mysterious depths of a man's nature. As Cranston spoke, his lips curled, his dark fingers clenched on his thick palm, and he half leaned forward.

Dan knocked out his pipe on the log. It was the only sound in that whole mountain realm; all the lesser sounds were stilled. The two men stood face to face, Dan tranquil, Cranston shaken by passion.

"I give you," said Dan with entire coolness, "an opportunity to take that back. Just about four seconds."

He stood very straight as he spoke, and his eyes did not waver in the least. It would not be the truth to say that his heart was not leaping like a wild thing in his breast. A dark mist was spreading like madness over his brain; but yet he was striving to keep his thoughts clear. It was hard to do, under insult. But he knew that only by craft, by cool thinking and planning could he even hope to stand against the brawny Cranston. He kept a remorseless control over his voice and face. Stealthily, without seeming to do so, he was setting his muscles for a spring.

The only answer to his words was a laugh—a roaring laugh of scorn from Cranston's dark lips. In his laughter, his intent, catlike vigilance relaxed. Dan saw a chance; feeble though it was, it was the only chance he had. And his long body leaped like a serpent thru the air.

Physical superior though he was Cranston would have repelled the attack with his rifle if he had had a chance. His blood was already at murder heat—a point always quickly reached in Cranston—and the dark, hot fumes in his brain were simply

nothing more nor less than the most poisonous, bitter hatred. No other word exists. If his class of degenerate mountain men had no other accomplishment, they could hate. All their lives they practiced the emotion: hatred of their neighbors, hatred of law, hatred of civilization all its forms. Besides, this kind of hillman habitually fought his duels with rifles. Hands were not deadly enough.

But Dan was past his guard before he had time to raise his gun. The whole attack was one of the most astounding surprises of Cranston's life. Dan's body struck his, his fists flailed, and to protect himself, Cranston was obliged to drop the rifle. They staggered, as if in some weird dance, on the trail; and their arms clapsed in a clinch.

For a long instant they stood straining, seemingly motionless. Cranston's powerful body had stood up well under the shock of Dan's leap. It was a hand-to-hand battle now. The rifle had slid down the hillside, to be caught in a clump of brush twenty feet below. Dan called on every ounce of his strength, because he knew what mercy he might expect if Cranston mastered him. The battles of the mountains were battles to the death.

They lunged back and forth, wrenching shoulders, lashing fists, teeth and feet and fingers. There were no Marquis of Queensbury rules in this battle. Again and again Dan sent home his blows; but they all seemed ineffective. By now, Cranston had completely overcome the momentary advantage the other had obtained by the power of his leap. He hurled Dan from the clinch and lashed at him with hard fists.

It is a very common thing to hear of a silent fight. But it is really a more rare occurrence than most people believe. If it true that serpents will often fight in the strangest, most eerie silence; but human beings are not serpents. They partake more of the qualities of the meat-eaters—the wolves and the felines. After the first instant, the noise of the fight aroused the whole hillside. The sound of blows was in itself notable, and besides, both of the men were howling the primordial cries of hatred and vengeance.

For two long minutes Dan fought with the strength of desperation, summoning at last all that mysterious reserve force with which all men are born. But he was playing a losing game. The malady with which he had suffered had taken too much of his vigor. Even as he struggled, it seemed to him that the vista about him, the dark pines, the colored leaves of the perennial shrubbery, the yellow path were all obscured in a strange, white mist. A great wind roared in his ears—and his heart was evidently about to shiver to pieces.

But still he fought on, not daring to yield. He could no longer parry Cranston's blows. The latter's arms went around him in one of those deadly holds that wrestlers know; and Dan struggled in vain to free himself. Cranston's face itself seemed hideous and unreal in the mist that was creeping over him. He did not recognize the curious thumping sound of Cranston's fists on his flesh. And Cranston had hurled him off his feet.

Nothing mattered further. He had fought the best he could. This cruel beast could pounce on him at will and hammer away his life. But still he struggled. Except for the constant play of his muscles, his almost unconscious effort to free himself

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that kept one of Cranston's arms busy holding him down, that fight on the mountain might have come to a sudden end. Human bodies can stand a terrific punishment; but Dan's was weakened from the ravages of his disease. Besides, Cranston would soon have both hands and both feet free for the work, and when these four terrible weapons are used at once, the issue—soon or late—can never be in doubt.

But even now, consciousness still lingered. Dan could hear his enemy's curses—and far up the trail, he heard another, stranger sound. It was that second of acute sensibilities that usually precedes unconsciousness, and he heard it very plainly. It sounded like some one running.

And then he dimly knew that Cranston was climbing from his body. Voices were speaking—quick, commanding voices just over him. Above Cranston's savage curses another voice rang clear, and to Dan's ears, glorious beyond all human utterance.

He opened his tortured eyes. The mists lifted from in front of them, and the whole drama was revealed. It had not been sudden-mercy that had driven Cranston from his body, just when his victim's falling unconsciousness would have put him completely in his power. Rather it was something black and ominous that even now was pointed squarely at Cranston's breast.

None too soon, a ranger of the hill had heard the sounds of the struggle, and had left the trysting place at the spring to come to Dan's aid. It was Snowbird, very pale but wholly self-sufficient and determined and intent. Her pistol was quite cocked and ready.

Dan Failing was really not badly hurt. The quick, lashing blows had not done more than severely bruise the flesh of his face, and the mists of unconsciousness that had been falling over him were more nearly the result of his own tremendous physical exertion. Now these mists were rising.

"Go—go away," the girl was commanding. "I think you've killed him."

Dan opened his eyes to find her kneeling close beside him, but still covering Cranston with her pistol. Her hand was resting on his bruised cheek. He couldn't have believed that a human face could be as white, while life still remained, as hers was then. All the lovely tints that had been such a delight to him, the play of soft reds and browns, had faded as an afterglow fades on the snow.

Dan's glance moved with hers to Cranston. He was standing easily at a distance of a dozen feet; and except for the faintest tremble all over his body, a muscular reaction from the violence of his passion, he had entirely regained his self-composure. This was quite characteristic of the mountain men. They share with the beasts a passion of living that is wholly unknown on the plains; but yet they have a certain quality of imperturbability known nowhere else. Nor is it limited to the native-born mountaineers. No man who intimately knows a member of that curious, keen-eyed little army of naturalists and big-game hunters who go to the north woods every fall, as regularly and seemingly as inexorably as the waterfowl go in spring, can doubt this fact. They seem to have acquired from the silence and the snows an impregnation of that eternal calm and imperturbability that is the wilderness itself. Cranston wasn't in the least afraid. Fear is usually a matter of

uncertainty, and he knew exactly where he stood.

It is extremely doubtful if a plainsman would have possessed this knowledge. But a plainsman has not the knowledge of life itself that the mountaineer has, simply because he does not see it in the raw. And he has not half the intimate knowledge of death, an absolute requisite of self-composure. The mountaineer knows life in its simple phases with little tradition or convention to blur the vision. Death is a very intimate acquaintance that may be met in any snowdrift, on any rocky trail; and these conditions are very deadly to any delusions that he has in regard to himself. He acquires an ability to see just where he stands, and of course that means self-possession.

This quality had something to do with the remarkable record that the mountain men, such as that magnificent warrior from Tennessee, made in the late war.

Cranston knew exactly what Snowbird would do. Although of a higher order, she was a mountain creature, even as himself. She meant exactly what she said. If he hadn't climbed from Dan's prone body, she would have shot quickly and very straight. If he tried to attack either of them now, her finger would press back before he could blink an eye, and she wouldn't weep any hysterical tears over his dead body. If he kept his distance, she wouldn't shoot at all. He meant to keep his distance. But he did know that he could insult her without danger to himself. And by now his lips had acquired their old curl of scorn.

"I'll go, Snowbird," he said. "I'll leave you with your sissy. But I guess you saw what I did to him—in two minutes."

"I saw. But you must remember he's sick. Now go."

"If he's sick, let him stay in bed—and have a wet nurse. Maybe you can be that."

The lids drooped halfway over her gray eyes, and the slim finger curled more tightly about the trigger. "Oh, I wish I could shoot you, Bert," she said. She didn't whisper it, or hiss it, or hurl it, or do any of the things most people are supposed to do in moments of violent emotion. She simply said it, and her meaning was all the clearer.

"But you can't. And I'll pound that milksop of yours to a jelly every time I see him. I'd think, Snowbird, that you'd want a man."

He started up the trail; and then she did a strange thing. "He's more of a man than you are, right now, Bert," she told him. "He'll prove it some day." Then her arm went about Dan's neck and lifted his head upon her breast; and in Cranston's plain sight, she bent and kissed him, softly, on the lips.

Cranston's answer was an oath. It dripped from his lips, more poisonous, more malicious than the venom of a snake. His late calm, treasured so much, dropped from him in an instant. His features seemed to tighten, the dark lips drew away from his teeth. No words could have made him such an effective answer as this little action of hers. And as he turned up the trail, he called down to her a name—that most dreadful epithet that foul tongues have always used to women held in greatest scorn.

Dan struggled in her arms. The kiss on his lips, the instant before, had not called him out of his half-consciousness. It had scarcely seemed real, rather just an incident in a blissful dream. But the word called down the trail shot out clear and vivid from the silence, just as a

physician's face will often leap from a darkness after the anesthesia. The whole scene in an instant became incredibly vivid—the dark figure on the trail, the girl's white face above him, narrow eyed and drawn-lipped, and the dark pines, silent and sad, overhead. Something infinitely warm and tender was holding him back against a holy place that throbbed and gave him life and strength; but he knew that this word had to be answered. And only actions, not other words, could be called its payment. All the voices of his body called to him to lie still, but the voices of the spirit, those higher, nobler promptings from which no man, to the glory of the breed from which he sprang, can ever quite escape, were stronger yet. He tugged upward, straining. But he didn't even have the strength to break the hold that the soft arm had about his neck.

"Oh, if I could only pull the trigger!" she was crying. "If I could only kill him—"

"Let me," he pleaded. "Give me the pistol. I'll kill him—"

And he would. There was no flinching in the gray eyes that looked up to her. She leaned forward, as if to put the weapon in his hands, but at once drew it back. And then a single sob caught at her throat. An instant later, they heard Cranston's laughter as he vanished around the turn of the trail.

For long minutes the two of them were still. The girl still held the man's head upon her breast. The pistol had fallen in the pine needles, and her nervous hands plucked strangely at the leaves of a mountain flower. To Dan's eyes, there was something trance-like, a hint of paralysis and insensibility about her posture. He had never seen her eyes like this. The light that he had always beheld in them had vanished. Their utter darkness startled him.

He sat up straight, and her arm that had been about his neck at her side. He took her hand firmly in his, and their eyes met.

"We must go home, Snowbird," he told her simply. "I'm not so badly hurt but that I can make it."

She nodded; but otherwise scarcely seemed to hear. Her eyes still flowed with darkness. And then, before his own eyes, their dark pupils began to contract. The hand he held filled and throbbed with life, and the fingers closed around his. She leaned toward him.

"Listen, Dan," she said quickly. "You heard—didn't you—the last thing that he said?"

"I couldn't help but hear, Snowbird."

Her other hand sought for his. "Then if you heard—payment must be made. You see what I mean, Dan. Maybe you can't see, knowing the girls that live on the plains. You were the cause of his saying it, and you must answer—"

It seemed to Dan that some stern code of the hills, unwritten except in the hearts of their children, inexorable as night, was speaking thru her lips. This was no personal thing. In some dim, half-understood way, it went back to the basic code of life.

"People must fight their own fights, up here," she told him. "The laws of the courts that the plains people can appeal to are all too far away. There's no one that can do it, except you. Not my father. My father can't fight your battles here, if your honor is going to stand. It's up to you, Dan. You can't pretend that you didn't hear him. Such as you are, weak and sick to be beaten to a pulp in two minutes, you alone will have to make him answer for it.

I came to your aid—and now you must come to mine."

Her fingers no longer clasped his. Strength had come back to him, and his fingers closed down until the blood went out of hers, but she was wholly unconscious of the pain. In reality, she was conscious of nothing except the growing flame in his face. It held her eyes, in passionate fascination. His pupils were contracting to little bright dots in the gray irises. The jaw was setting, as she had never seen it before.

"Do you think, Snowbird, that you'd even have to ask me?" he demanded. "Don't you think I understand? And it won't be in your defense—only my own duty."

"But he is so strong—and you are so weak—"

"I won't be so weak forever. I never really cared much about living before. I'll try now, and you'll see—oh, Snowbird, wait and trust me: I understand everything. It's my own fight—when you kissed me, and he cried down that word in anger and jealousy, it put the whole thing on me. No one else can make him answer; no one else has the right. It's my honor, no one else's, that stands or falls."

He lifted her hand to his lips and kissed it again and again.

And for the first time he saw the tears gathering in her dark eyes. "But you fought here, didn't you, Dan?" she asked with painful slowness. "You didn't put up your arms—or try to run away? I didn't come till he had you done, so I didn't see." She looked at him as if her whole joy of life hung on his answer.

(Continued Next Week)

Lenten Days

These are Lenten days for the faithful. Even the congressional seed is said to be insufficient to go around.

"IT CAN'T BE DONE"

Somebody said that it couldn't be done.

But he, with a chuckle, replied That "maybe it couldn't," but he would be one.

Who wouldn't say so till he tried. So he buckled right in, with a trace of a grin.

On his face, if he worried he hid it. He started to sing as he tackled the thing.

That couldn't be done—and he did it.

Somebody scoffed: "Oh, you'll never do that—"

At least, no one ever has done it."

But he took off his coat and he took off his hat.

And the first thing we knew he'd begun it.

With the lift of his chin, and a bit of grin.

Without any doubting or quiddit.

He started to sing as he tackled the thing.

That couldn't be done—and he did it.

There are thousands to tell you it cannot be done;

There are thousands to prophesy failure;

There are thousands to point out to you, one by one,

The dangers that wait to assail you. But just buckle in with a bit of a grin.

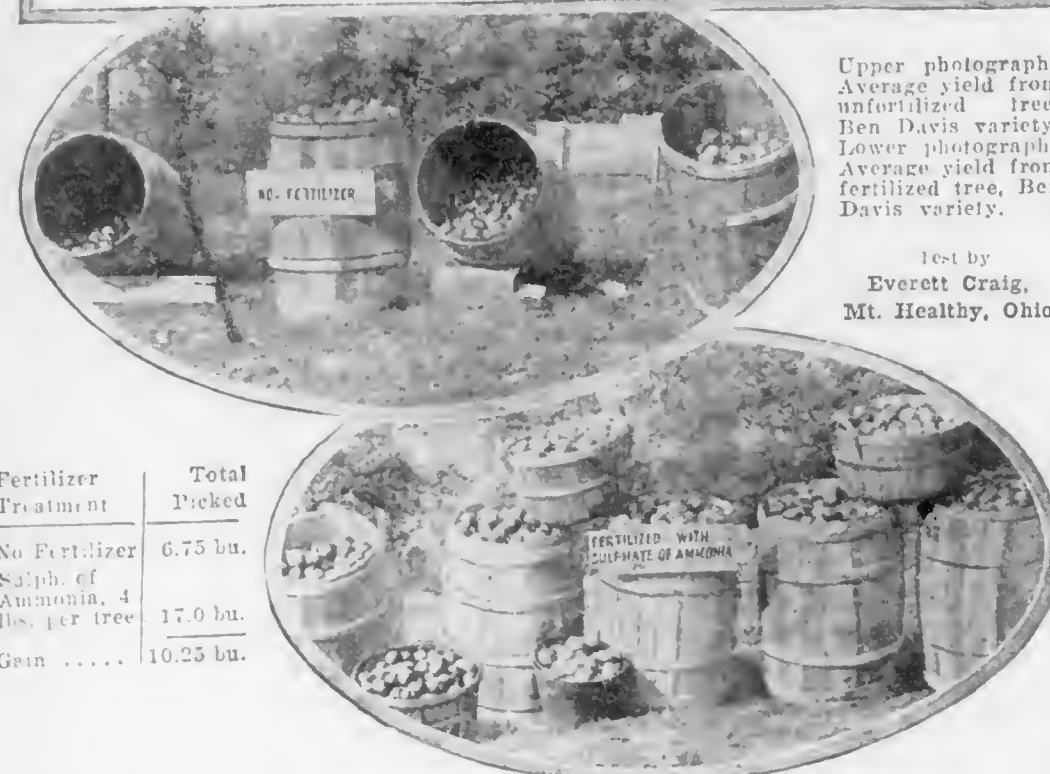
Then take off your coat and go to it;

Just start in to sing as you tackle the thing.

That "cannot be done"—and you'll do it.

TOP-DRESSING TALK No. 3

Rejuvenate Your Orchard



Upper photograph: Average yield from unfertilized tree, Ben Davis variety. Lower photograph: Average yield from fertilized tree, Ben Davis variety.

Test by Everett Craig, Mt. Healthy, Ohio.

(From Ohio Bulletin No. 339, "Orchard Rejuvenation in Southeastern Ohio.")

"Grass-mulch culture plus fertilization with quickly available nitrogenous plant food gave an average gain of 22 barrels of apples, or a net cash gain of \$71.48 per acre per year over the tillage-cover-crop system without fertilization."

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ARCADIAN SULPHATE OF AMMONIA

The proper time to apply a quickly available nitrogenous fertilizer is three weeks before the trees blossom. Arcadian Sulphate of Ammonia, applied over the feeding roots at the rate of 100 to 300 pounds per acre, will invigorate your trees, stimulate fruit bud formation, increase the

amount of fruit set and enable the trees to carry and mature a larger crop of finer fruit.

Demand Arcadian from your dealer. It is in better physical condition, it is quickly available and it doesn't wash out of the soil. "A little goes farther."

Write Desk No. 41 for Bulletin No. 85 "Fertilizing the Apple Orchard."

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Berkeley, Cal.

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AGRICULTURAL DEPARTMENT, NEW YORK

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"Challenge" Brand Ground Limestone, 50% through 20 mesh, in bulk, paper bags and returnable cloth bags.
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Palmer's York Agricultural Lump Lime, in bulk only, 90% Calcium Oxide.

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TALKS WITH THE BOYS

EDITOR'S LETTER

To the Boys:

I wish you could have been at the State Products Show at Harrisburg last week. The exhibition was very interesting and instructive. State College had a splendid exhibit and any real live farm boy would be inspired to go to State College sometime if he possibly could. Another feature was the exhibition of work done by the pupils of the vocational schools throughout the State. No doubt some of you had work there. Well, it was great and I only felt sorry that every farm boy and girl does not have an up-to-date school of that kind within reach. Then, there was the exhibit of the boys' and girls' clubs which attracted a great deal of attention. If the old saying, "We learn to do by doing" is true, then the next generation of farmers is going to put us older ones in the shade, because they are learning how to do things the best way now so they will avoid many costly mistakes. Our space is limited this week and I will only take space to encourage you to keep up the good work. Our department is getting a good deal of attention and we want to make it worth while.

Sincerely,
The Editor

HAS SOME TROUBLE

Dear Editor—I saw in the Pennsylvania Farmer that you wished to start a boy's corner in the paper and I wish to help you along with it.

I am fifteen years old, am on a farm and have five brothers, all of whom want to boss me. I don't mind one boss but when there is three or four, that gets my goat.

Now I wish to say I do not do everything perfect and it seems they impose on me a good bit and I get cross and tell them I don't want to do it. This morning I cleaned a steer stable after father went to Quarryville, but when he came home I had it finished and it seemed to please him. The rest of my spare time I split wood and fought.

When I am cross I am liable to say anything. So the other day I told them I was going to leave in the spring and they said I would be glad to come back, now I wish to get your opinion of my case.—John.

Now, John, whatever you do, don't work yourself up to a pitch where you will leave home to spite somebody else. It is all right to work away some when you can be spared but never desert a post. Older brothers are often over-bearing and inclined to impose upon younger brothers, but don't take it too seriously. No doubt they think all the world of you, but, boy-like, they try not to show it. Your best plan is to try to cultivate patience. Do your own work patiently, and above all things keep from quarreling. It always pleases a bully to get somebody mad—especially a smaller person. I hope older brothers everywhere will think over this subject. You may think your meanness is fun. It is a low grade of fun and may cause permanent injury to the object of your so-called sport. Above all things, John, don't cultivate self-pity. Don't let yourself believe that you are a badly used boy and get in the habit of pitying yourself. That makes you weak. Stick to your guns. Learn to smile and keep your temper.—Editor.

STUDIES BIRDS

Dear Editor—I certainly am glad the Pennsylvania Farmer has set aside a space for the boys. I am sure this will bring many boys in closer touch with the paper and by doing so they will be educated in many lines of farming. I read a fine story on birds in the Jan. 22d issue and I think it was splendid.

One of the most useful birds to the farmer is the horned owl. This bird is very large and strong. It has large yellow eyes. This bird is very useful to the farmer because it catches and eats many mice. It will soar in the air until it spies its prey, then with a quick swoop it will catch it up with its sharp claws.

The horned owl tears its food to pieces with its claws, then eats the meat and the bones and fur are cast off. Altho this bird lives mostly on mice it also eats rabbits and many other pests—of the farmer.

If you closely watch the habits of this bird you will find it searches for its food mostly at night. If anything tries to harm its young it is a fierce fighter but otherwise it is a shy bird.

Now that you see this bird is so useful to the farmer by destroying mice and rabbits let's not kill any more owls. I have had a very fine visit but now I must say good-bye.—Aaron A. Dieffenderfer, Union Co., Pa.

WILL MAKE A GOOD FARMER

Dear Editor—I certainly think it is nice that the boys and the Editor are going to have a page too, as well as the rest, and I wish this page great success. I am 13 years old. I have one brother older. He was one of the Butler County boys that went to State College last June. There he won a free trip to the great Eastern Exposition in Massachusetts. I have a sister and brother younger than I. I live on a 130-acre farm. I own one-fourth interest in twelve head of thoroughbred Holstein cattle.

Three years ago I won a Berkshire hog for having the best ten ears of corn in the boys' corn club which was held in Butler. I mowed and raked over 100 tons of hay last summer. We have a sulky plow, and I do most of the plowing as well as some of the harrowing and rolling.

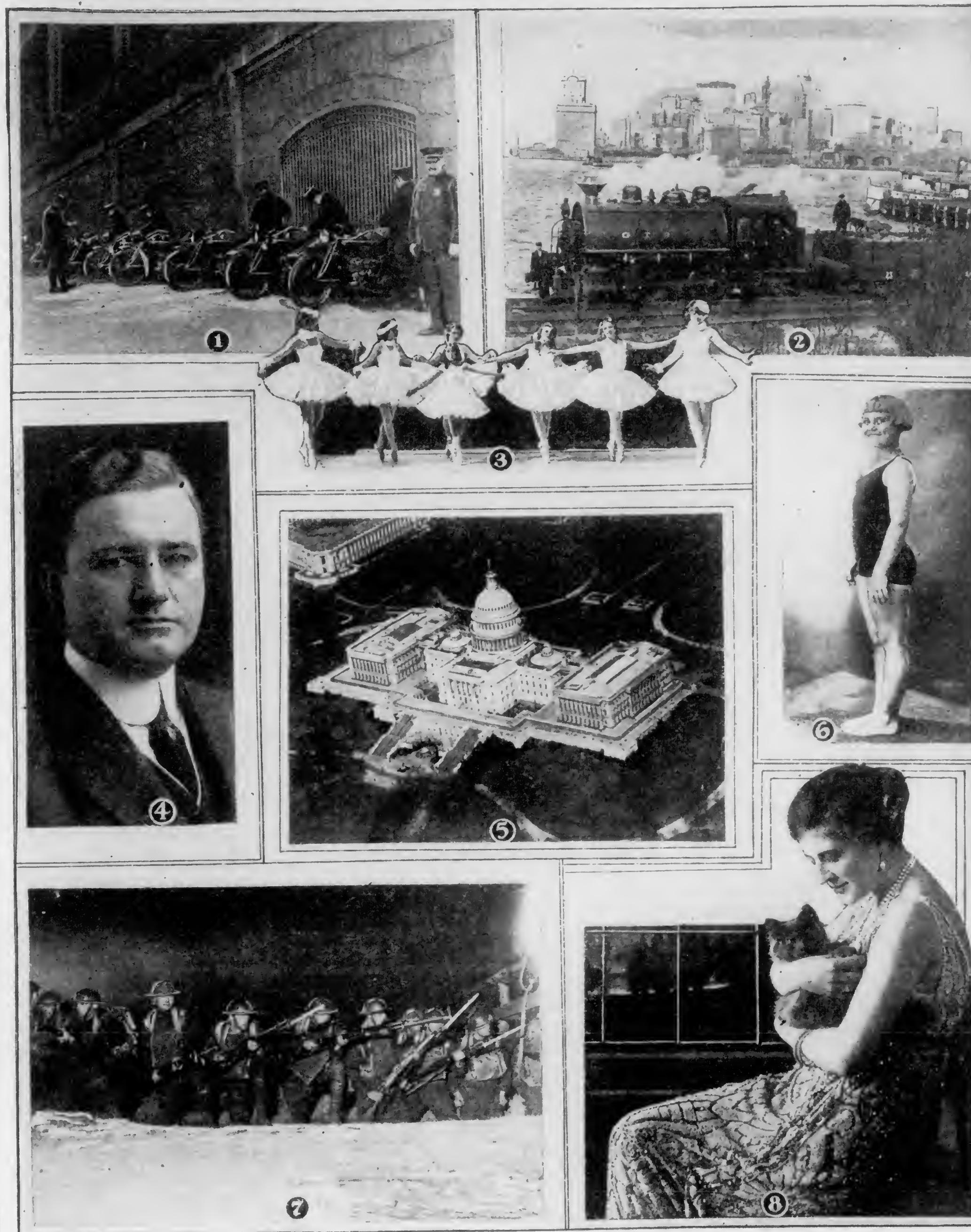
I have about a mile to go to school. I am in the eighth grade. I like to go to school and we have a good teacher. I hope that more boys may get interested and help to make our page a page in the Pennsylvania Farmer that every one will want to see.—Howard F. Fox, Butler Co., Pa.

LIKES OUTDOOR LIFE

Dear Editor—I am very fond of outdoor sports. I love to hunt and trap. I have a .22 cal. repeating rifle. I have eight traps set for skunk and minks. I caught two minks last fall and got \$5 for one and \$10 for the other.

I am glad there is a page in the Pennsylvania Farmer for boys. If every boy writes a little letter the page will soon be full. I am 13 years old, I go to school and am in the seventh grade. We own 13 acres of woods, so I do most of my trapping on our own land.—Guy Bliss, Jefferson Co., Pa.

PASSING EVENTS IN PICTURES



1—Eighty-six additional Motorcycles, with Side-cars, were turned over to the New York Police for the Purpose of Chasing Bandits.

2—The Smallest Railroad in the World is to be found on Governor's Island, operated by the United States Army.

3—A Group of Young Ballet Dancers, caught by the Camera while dancing at a Pageant.

4—J. P. Griffin, President Chicago Board of Trade, just now much discussed by Farmers.

5—How the Capitol would look to the American Eagle, if it were to soar over Washington.

6—Little ten-year-old Vivian Bernardi, of the Canal Zone, Panama, is the most perfect child in health, figure and beauty of

that section. She has given exhibitions in swimming before President-elect Harding, Gen. Pershing, the President of Panama and many others.

7—First Division "Going into Action" at Camp Dix Reunion.

8—Miss Ganna Walska, Operatic Star and Bride of Alexander Smith-Cochran, New York multi-millionaire.

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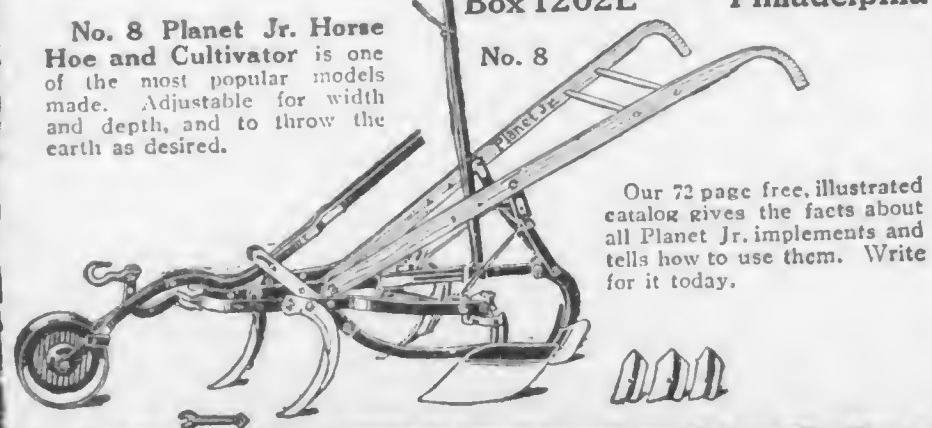
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THE GRANGE AND THE FARM BUREAU

Note—We have received a number of letters on this subject since the meeting of the State Grange, most of which were too personal or too critical for publication, we thought; but the following is a temperate discussion of an important question and we gladly publish it. The writer bravely signed it but we withhold the name at our own suggestion.—Editors.

The position taken by the Pennsylvania State Grange towards the Farm Bureau will not only be hard to justify, but still harder to maintain. It is not so much a question whether the influences back of the Farm Bureau movement are right or wrong, but whether the Grange has either the legal or moral right to dictate to its members which organization they may or may not join.

If it has such a right then it could readily prevent its members from joining the church, Masons or Odd Fellows, and certainly no such power was ever granted it, either by its own representatives or by the National Grange. The right to join any organization is either a moral, civil, social, religious or political one and must not be interfered with by the Grange.

The Grange has been in existence for more than a half century and during that time has obtained a membership of about 7,000,000. Thirty-three states have been organized and it is absurd to think an organization that can do that does not possess some merit, or that its members are actuated by dishonest motives. Many members of the Grange are also members of the Farm Bureau and we challenge their integrity when we accuse the farm bureau of being in control of selfish or corporate interests.

The Grange should consider carefully its attitude towards the farm bureau and be not too hasty in passing judgment upon the movement. There is no power in a threat, nor argument in abuse. A bluff usually works until called and in this case it has been called and the work of federating is going forward. The same energy and thought required to keep a granger from joining the farm bureau, would, if rightly directed, secure two members for the Grange, instead of wasting our energies in fighting a new organization let us use them in building up our own.

Lincoln gave us some splendid advice when he said, "Let not him who is houseless pull down the house of another, but let him work diligently and build one for himself, thus, by example, assuring that his own shall be safe from violence when built."

If we build our own organization along the lines laid down by its founders we have nothing to fear from others. If the farm bureau movement is wrong, it will soon fall of its own weight, but if it is right, then it will be far better for the Grange to have the farm bureau as a friend than an enemy.

These words come to us as we write "cherishing in our hearts every kind feeling towards all other orders and associations which seek to prevent human welfare, let us strive with them, working hand in hand for the good of our fellow-beings." You will note that there is no threat, no display of fireworks of any kind, but an earnest desire to be helpful. This is the spirit in which the Grange was conceived and only in this spirit will it be able to grow in strength and numbers and maintain its existence.

The man who wrote those words must have been inspired by God and

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given a vision of future. He knew that in due time rival organizations would spring up and that bitter seeds of jealousy would be sown. Let us accept his words of wisdom in guiding our future action, "and with malice towards none, but with charity for all, let us strive to finish the work we are in."—A Long-Time Granger.

JUSTICE FOR ALL

Editor Pennsylvania Farmer:

I love to "pick thru" the crop of good things furnished every week by Pennsylvania Farmer, and make note of anything that stands out conspicuously as worthy of repetition, or, more careful consideration.

Two such instances I find in your issue of January 15 and which, coming from two different sources, are identically the same in meaning and righteous significance.

The first is where you write in the editorial—Government and Business—"It is not enough that a governmental policy apply equally to all classes; all policies, to be acceptable should be economically sound and morally just." The other is your quotation from Governor and Vice-President-elect Coolidge, that, "The great thing for all agriculturists to remember is the interdependence of all our national activities."

Both of these statements are indeed timely and illuminating, when, all over the world, class, business and national selfishness seems to be "running riot."

While it is well that statements like these should be uttered, no definite result will be obtained except an earnest effort is made to find how to make governmental policies accord with economic justice and morality, or how to impress the usually class selfish mind with the truth, that no permanent progress can be made by any one class enjoying governmental favor—at the expense of some or all of the other classes.

To my mind, before we can build up a governmental policy strictly sound and just, we must "lay the axe to the root of the tree" of the private control or ownership of the natural resource of land—the God or Nature given source of all wealth.

While the producers of wealth (farmers, business men, manufacturers, mechanics and laborers), have to give up, in purchase price or yearly rental, a large portion of their production for nothing but the mere permission to produce, our governmental policy will remain economically unsound and unjust, and little, if any, thought will be given to Mr. Coolidge's advice. The continuance of our present policy almost compels the farmer and all other classes of useless producers to fight for their own selfish interests regardless of the rights and economic advancement of their neighbors and, what would be under free conditions of production, friends.—Oliver McKnight.

Good Advice

"This—uh—glub—spaghetti is awful—lob—glob—slippery stuff!" complained a customer in the rapid-fire restaurant.

"Aw, don't try to eat it with your knife!" briskly said Heloise, the waitress. "Ketch it by the tail and reel it in."

"Where are the villagers who used to dance on the village green?" "You can now find them assembled in front of the village screen."—Film Fun.



FROM A 2A BROWNIE NEGATIVE.

After all, pictures of the children, just every day pictures in and about the home are the ones we care for most. Such pictures are easily made with a Kodak or Brownie and the expense is less than you think.

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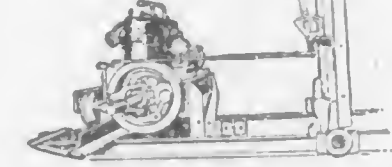
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GARLICKY WHEAT

Recently Prof. Thomas B. Symons, director of the University of Maryland extension service, addressing the county agents, drew attention to the great handicap of the term "garlicky" applied to wheat inspection, as the name prejudiced the foreign buyers, and they would not pay as much for it and it was now selling at 15 cents discount per bushel. Further, he said that seven-eighths of all the wheat grown in Maryland is classed as "garlicky," and suggested that the farmers of the state petition the national government to substitute another name.

I am sure the farmers are pleased to see this awakening of the agricultural interests of the state to such serious and drastic conditions of many months long standing. Certainly it would have helped greatly if this same advice had been given last fall to these same state representatives that farmers be urged not to seed garlic wheat, not that the garlic would trouble this year, but what about the years to come?

Last October a writer in the Maryland Farmer called attention to this very condition and showed the then discount between the shipping and "garlicky" grades was 20 to 22 cents per bushel. Following this publication the price narrowed to 10 1/2 cents, while lately it has rolled around 14 1/2 to 15 cents, and this is in midwinter, when garlic is supposed to waste in winter's cold.

Some years ago, when these grades were being established by the Government, Senator Joseph I. France, who understood Maryland conditions, strenuously opposed using the term "garlicky" and the wisdom of his forethought stands clearly out now, under present handicaps. With a stock now (I am informed) in the elevators here of this grade of 1,750,000 bushels, and January being a month in which taxes must be settled in the counties, makes for a worse condition for this high cost produced wheat, and this ruinous difference and long ruling on only "one-half of 1 per cent garlic" certainly shows a most serious condition for the producers and calls for some real strenuous activity from the highest agricultural interests of the state.

Director Symons advises the farmers to petition the government for a change of name, which is all right as far as it goes, but why is such a drastic financial situation saddled on the farmers to handle when clearly it is one of the problems that the regents of the University of Maryland should energetically push, and the initiative should have come from this source months ago, more especially, if the College Park officials could not work out a solution.

Garlic shrivels in cold weather (it's January now), but as a further help, could not the dryers in the elevators be used to advantage, and with the screening and blowing, should not this wheat grade higher? Certainly it would have a much broader market and sell by sample at a much narrower difference than now and thus prove a real financial help to many. Farmers, don't you see that you need an agricultural college as a separate unit, but coupled up with the state's educational park, but with a board keenly sympathetic to your farm problems and energetically alive, working for their betterment.

In this case, is it "too much universality" or not enough interest in your agricultural activities?—C. Bosley Littig in Baltimore Sun.

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SLAG AS A ROAD BED

Conowingo Furnace, Lancaster Co., Pa., blew out in 1865, after being in operation for upwards of seventy-five years—during that time large quantities of slag were made and hauled out in great piles, amounting to thousands of tons. Four years ago the supervisors of East Drumore Township decided to experiment with this slag as a road bed, selecting a stretch of quick sand on which to make the test. Since then, nothing has been done to it and it has worn well and would wear a year or two more without special need of any repairs. Winter and summer it has been the same, no mud in winter, no dust in summer.

The supervisors of East Drumore Township have recently purchased the entire deposit on what is known as the Nolt bank and expect in the near future to begin hauling and laying the road bed from Quarryville Cemetery to Hopkins Mills.

The state has recently taken up the slag experiment, also, and on several places on the state highway between Quarryville and Holtwood between six and seven hundred two-horse loads were laid recently, which were taken from what is known as the Hopkins bank.

The supervisors of East Drumore Township expect to open the great project for the township by appointing a "good roads day" and inviting the farmers and working men of the township to give that day with teams, shovels and picks free and they will do it. It has been proven to satisfaction of the taxpayers of the township that this slag makes a more lasting road bed than stone and being easy of access and much cheaper.

The wearing qualities of slag comes from the fact that it does not grind into dust like stone to be blown away by the wind but becomes more like sand and does not respond to every little breeze that comes along, neither is it so readily washed away by heavy rains.—J. B. M.

DAYLIGHT SAVING

Is it not a mistake to consider the daylight saving law a benefit, even to city workers? A lawyer, discussing the question last year, said he liked it himself because it was not burdensome to him to get to his office an hour earlier but for factory workers it was a vastly different matter; in hot weather very often the early part of the night is so hot it is impossible to sleep until after midnight—often till 2 o'clock—and the working man seriously needs the extra hour for sleep. If a man does not need to rise till 9 or 10, getting up at 8 is no particular hardship, but for a man who usually rises at 5 it is not desirable to rise at 4. I fail to see where in the plan has a good point except for leisure people.—E. M. A.

MODIFY BEETLE QUARANTINE

The quarantine established by the Pennsylvania Department of Agriculture against the Japanese beetle, in the eastern part of the state, has been modified in the case of cut flowers and cut flower products. The quarantine, as originally issued, provided that cut flowers moved from the areas under quarantine, should undergo Federal inspection at all seasons of the year. The modification provides that cut flowers being shipped from the quarantined area need undergo inspection only between June 15 and Nov. 1 of each year.



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NEW FEEDS

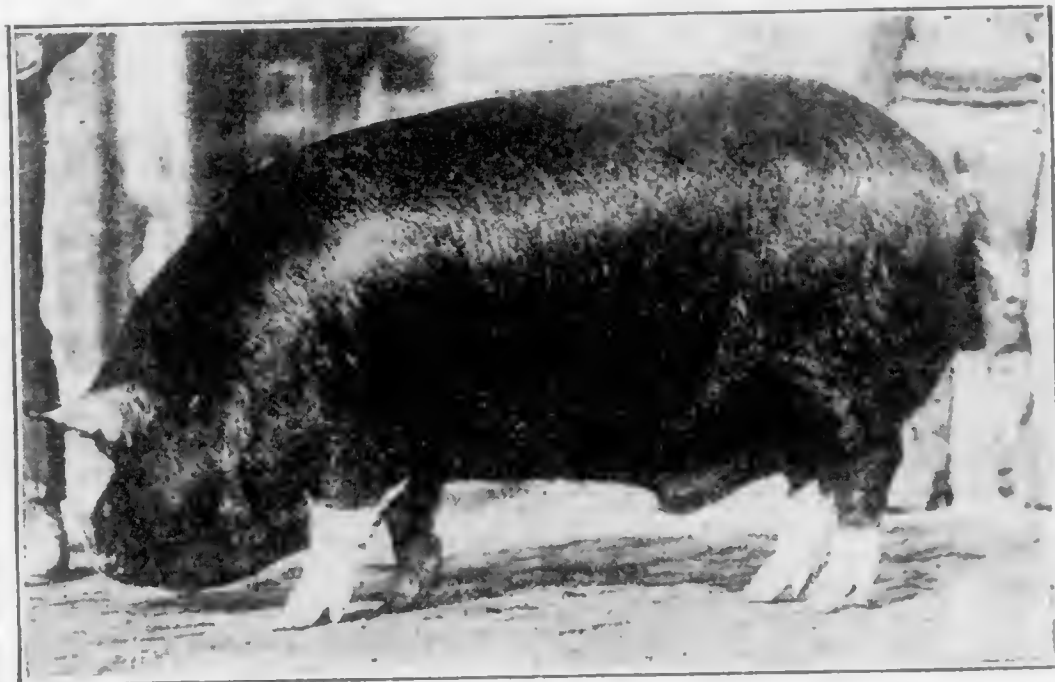
By W. H. Tomhave

The farmer and live stock producer is constantly confronted with the problem of deciding just what feeds are most economical for his use. He has access to an abundance of data regarding the standard feeds upon the market. Most of these feeds have been used in feeding tests at the different experiment stations with live stock of different ages and classes. With a knowledge of the feeding value and the price per ton of such feed, it becomes an easy matter to decide which feed to purchase and the combination that should be fed.

We find, however, that new feeds are constantly being manufactured and put on the market. The farmer is urged to purchase such feeds by the dealer who is interested in the sale and distribution of the feed in question. If the feed is a product such as tankage, meat meal, cotton-

entire feeding period. The amount of corn consumed in the two lots varied but little while there was a marked difference in the amount of protein supplement consumed. The corn and tankage lot consumed 4904.9 pounds of corn and .293 pounds of tankage. The other lot consumed 4927 pounds of corn and 494 pounds of commercial mixture. There was very little difference in the average daily gain per pig; 1.64 pounds in the corn and tankage lot and 1.59 pounds in the other lot.

The feed required to produce one hundred pounds of gain is of importance. It required 412.5 pounds of concentrates to produce one hundred pounds of gain in the corn and tankage group and 441 pounds in the corn and commercial mixture group. The ratio or proportion in which the corn and protein supplement was consumed is an interesting factor. The pigs seem to have a keen appetite for the commercial mixture and consumed it at the rate of one pound



Champion Berkshire Barrow. International Livestock Exposition, Chicago, Ill., 1920. Exhibited by Pennsylvania State College

seed meal or oil meal with a guarantee of a certain per cent of protein, its value is readily determined.

The function of the experiment station is to study the feeding value of straight feeds that are likely to be put on the market and used by the farmers. During the past season, a feeding test was conducted at the Pennsylvania Experiment Station to study the value of tankage and a commercial feed composed of bone and tankage, as a source of protein in fattening swine for market. Both of these products are manufactured in the packing house. The tankage used was a 60 per cent protein product. The commercial mixture is made by adding 10 per cent of bone meal to a 60 per cent protein tankage, thus producing a product of lower protein content than the higher grade material. The object in adding the bone meal to the protein feed is to produce a feed that is high in mineral content. The feeding trial was conducted with well grown, thrifty pigs weighing about 100 pounds when the test was started. Each lot contained twelve pigs and both lots were fed for a period of sixty-four days when they were marketed. The feed consisted of shelled corn and the protein supplement. Both groups were fed from a self-feeder. Both lots had access to a quarter of an acre of good rape pasture during the

for each nine pounds of corn consumed, while the other lot required one part of tankage to 16 pounds of corn. There was not only a difference in the amount of feed required to make 100 pounds of gain and the amount of protein supplement consumed but in the cost of production. The shelled corn was valued at \$1.65 per bushel, tankage \$1.10 per ton and commercial mixture at \$100 per ton. The cost of the forage for each lot was based upon the actual cost involved and amounted to \$5.86 per lot. After allowing for the cost of the forage consumed, the total grain cost for the two lots was as follows: Corn and tankage, \$160.76 and \$169.75 for the corn and commercial mixture lot. In this case the cost of feed was nine dollars more in the one lot than in the second lot. This factor would be of minor importance if the lot that cost the greater amount for feed consumed had made greater gains and possibly sold for more money per hundred pounds live weight. Such was not the case, however. The lot that cost the least amount of money for feed consumed made greater gains during the feeding period and also made the greater gains for every hundred pounds of feed consumed. The cost of making 100 pounds of gain in this case was \$12.74 where the hogs were fed tankage and corn and \$13.90 per hundred



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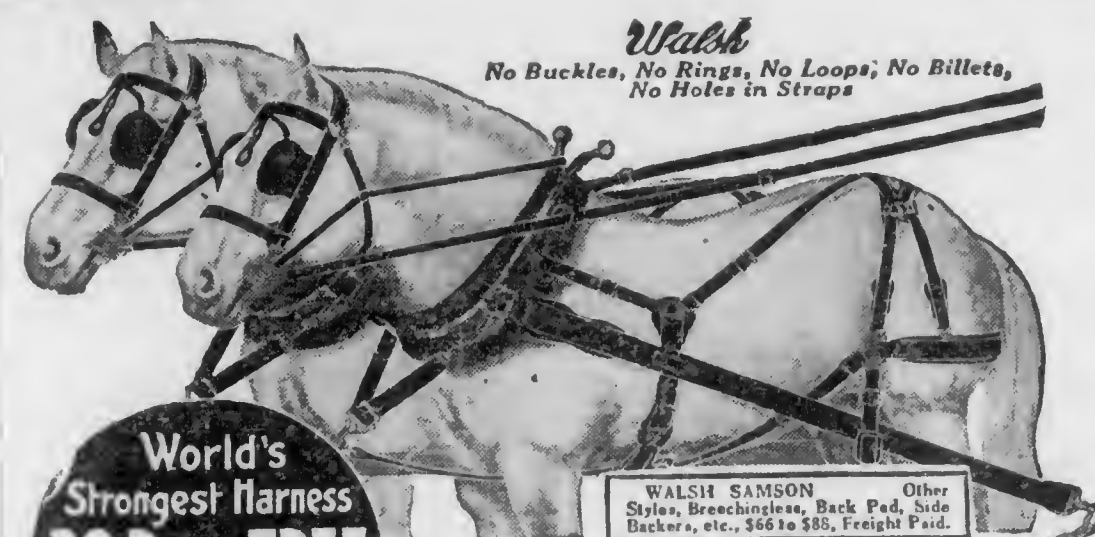
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DUROCS—ready for service. 100 lbs. pigs that will make something fine. Fall pigs, either sex. 6 to 10 weeks.

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DUROCS—ready for service. 1

GOMBAULT'S CAUSTIC BALSAM

THE STANDARD REMEDY
HUMAN and VETERINARY



It is generally true that an external remedy that is good for the animal is also good for the human body, and Gombault's Caustic Balsam is no exception to this rule. The many testimonials received from physicians and veterinarians are convincing proof of its merits. Rheumatism, Backache, Neuralgia, Sprains, Strains, Lumbago, Sore Throat, Stiff Joints, in fact any ailment requiring an external application can be treated with absolute safety and the beneficial results produced are all that could be desired.

Soothing and Healing--A Perfect Antiseptic

As a veterinary remedy its curative qualities have been acknowledged for many years in cases of Curb, Splint, Sweeney, Capped Hock, Strained Tendons, Spavin, Ringbone and other bony tumors. A trial will convince anyone that here is a remedy without an equal. Write for any information desired. \$1.75 per bottle at druggists or sent by parcel post on receipt of price.

The Lawrence-Williams Co., Cleveland, Ohio



DELAWARE FARM NOTES

The executive committee of Sussex County Farm Bureau has chosen an organizing committee for the membership drive which will be under way in a short time. Following is a list of those selected and the communities in which they will work:

Milo Faber, Milford; Winter C. Bennett, Slaughter Neck; Mrs. E. B. Gates, Lincoln; G. W. G. Coughlin, Ellendale; Elmer Dickerson, Milton; H. H. Fisher, Lewes; T. C. Donovan, Midway; Edward Phillips, Rehoboth; S. E. Evans, Millville; Hiram James, Ocean View; James B. Dickerson, Roxana; G. E. Bunting, Edward McCabe, Seelyville; Reuben Evans, Frankford; R. D. Lingo, Jr., Dagsboro; John Dobson, Millsboro; John A. Jones, Georgetown; Theodore M. Jarvis, Harbeson; Edward Vaughn, Coolspring; William A. Carlisle, Greenwood; George A. Hill, Francis Morgan, Bridgeville; Thos. N. Rawlins, Seaford; Charles G. Otwell, J. E. Hearn, Laurel; William Ellis, E. W. Palmer, Delmar; William Lingo, Lewes; Dr. O. V. James, Gimbora.

The action of the Seaford Produce Growers' Association in refusing to contract for tomatoes the coming season unless the prices are satisfactory is to be taken up with all of the produce organizations in the county, and a request made of the members to fall in line with the farmers in the vicinity of Seaford.

At the annual meeting of the Seaford Produce Growers' Association, held on Saturday, Jan. 23, the election of six directors to serve for a term of three years was the principal item of business. Edward B. Brown, Ezekiel G. Coulburne, Daniel W. Ellis, Charles J. Elzey, Irvin F. Smoot and Fred L. Williams were elected.

The report of the treasurer gave some idea of the volume of business transacted by the Association for the year; more than \$22,000, having passed through the treasury, as compared with about \$8,000 the previous year.

One of the matters discussed was the approaching campaign for membership in the Farm Bureau, when it is expected that every farmer in Sussex County will be solicited. The farmers are realizing the necessity of thorough organization for their own protection. The Farm Bureau is nation-wide, and now has a membership of nearly 2,000,000 farmers.

The annual meeting of the stockholders of the Delaware Apple Company, was held last Saturday in the offices of Marvel & Layton, in the du Pont Building, Wilmington. The following directors were elected: Josiah Marvel, Prof. C. A. McCue, W. C. Bailey, H. Dildgely Harrington, Charles S. Rayburn, A. J. Taylor, E. C. Jones, Charles E. Enes, L. Mulford Taylor, G. D. Hopkins and James Howe.

Election of officers by the board of directors will take place some time in the near future.

The company will state in upon a sale of the present issue of stock with all debts paid and \$25,000 to \$30,000 in the treasury. It has grown an orchard in eleven years at a cost of about \$4 per tree.

The company owns the largest orchard east of the Mississippi comprising 76,806 trees on an acreage of something over 800. This orchard is located near Bridgeville, Del.

E. M.

COUNTY NOTES

Carroll Co., N. Y.—Weather has been good, farmers ploughing for yields happiness.

spring crops. Temperature has been above normal. At present temperature is lower. The lowest was four above zero, prospects of an ice harvest. Roads are good for this time of year and some farmers are hauling grain to elevators. Labor plentiful in Union Bridge district due to curtailed production of cement plant. The County Agent has secured an agreement with a woolen company to convert wool into blankets and motor robes for the producer. The prices for farm produce are: Chickens, 30c lb.; eggs, 64c doz.; butter, 45c lb.; wheat, \$1.80 bu. and \$3 per 350-lb. corn.—Harry I. Rinehart.

Wyoming Co., Pa.—Unusually mild weather with poor prospects for ice crop, no snow yet. Prices for farm produce very low, dressed pork, 12@14c; beef, 10@12c; eggs, 55c; butter, 55c; milk, \$3.39 for 3.6 per cent butter fat. Live stock hard to sell at any price. Farmers feel that prices of machinery, etc., must come down to correspond to prices of farm produce and are buying very little. Most of the dairymen here have signed the Dairymen's League co-operative contracts, and feel that the future of the dairy industry depends upon co-operative handling of the production end of the business at least.—P. A. Valentine.

Lackawanna Co., Pa.—Have had an open winter with more rain than snow, with alternate thawing and freezing with icy roads. Farmers harvesting ice crop, hauling out manure and getting out a supply of wood for the year. Those who are fortunate enough to have wood lots are burning wood in stoves and furnaces. Price of potatoes changeable, have been \$1.70 to \$1.50 per bu. Small ones \$1 per bu. Butter 55c lb. Eggs, 80@85c doz.—E. A. K.

Chataqua Co., N. Y.—Eggs have held their price well while everything else dropped, but now they, too, are down. Within a month the price dropped from 85c to 60c and is still falling. Butter is around 50c, but dropping rapidly. Hay and grain are worth on the market far less than it cost to produce them last summer. Potatoes \$1 bu. and apples almost free for the asking. People are very busy cutting wood because wood is about the only farm product that is marketable and every one who has a dairy must have feed for the cows.

The fact that manufactured goods are dropping a little, help some, but times surely look bad for every farmer whose living depends upon his farm operations. Men work where ever there is a job but help in the house is about as scarce as ever, and if it were obtainable at all the price would probably be less than formerly. Crops were plentiful last year and were, as a rule, well cared for. Most people are coming to raise their own wheat which means a vast saving in living expenses. We don't eat bread but we do keep a cow or two, if we are not dairymen and we use all the milk, butter and cream we can. Why not? Nothing else is so cheap.

People are housing and repairing farm machinery more carefully than ever before, only buying new when it is entirely unavoidable.

According to the views of our state superintendent of education, the firm of hand and brain is not yet ready to dissolve partnership.

Top-notch efforts nearly always

GUERNSEYS

A Wisconsin Grade Guernsey has produced 12,088 lbs. milk and 530 lbs. fat. Grade Guernseys are \$125, open framed, and produce liberal quantities of rich milk. Send for free booklets.

The American Guernsey Cattle Club
Box M 25 Paterson, N. J.

WILL GIVE any responsible farmer the use of a registered Holstein bull calf, free, for three years. Live Stock Improvement Co., CHARLTON, MASS.

ORIGIN FARM

Wholesale Holsteins, Registered and A. R. O. sold, all ages, for sale. Federally tested. GEO. E. STEVENSON, SCRANTON, PA.

WANTED A HOME

For choice registered and high grade Holstein-Friesian heifer and bull calves, \$25 and up. Write us your want. Brownsville Farm, Carlisle, Pa. McGraw, N.Y.

REGISTERED HOLSTEINS

18 good cows, all bred; 50 heifers from 1 to 25 months old; 3 better calves; 3 service bulls; 5 bull calves. Write right. MUNNVILLE, N. Y.

AYRSHIRE BULL CALVES

Finest quality. For sale. TEMPLETON & SON, ULSTER, PA.

SUNNYBROOK GUERNSEYS

10 bred, 1000 lbs. milk, 100 lbs. fat. For sale. EDWIN B. MAULE, COATESVILLE, PA.

Poultry

IT IS AN INVESTMENT

to buy hatching eggs and day old chicks from a reliable source. We have a large stock of high quality, healthy, day old chicks, 100 per cent satisfaction and profit to our customers. Write for prices. J. V. BITNER, LANCASTER, PA.

TERMS CASH WITH ORDER

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BABY CHICKS

Super Quality heavy-birding Farm Eggs. 100 per cent satisfaction. Write for prices. J. V. BITNER, LANCASTER, PA.

CHICKS

From our business bred 8 C. White Leghorns. The source of our own neighborhood have bought practically all our chicks for three years with perfect satisfaction. You will please us. Write for prices. P. E. RENTZEL, DOVER, PA.

BABY CHICKS

Black and White Leghorns from pair of selected hens and price paid for the chicks. Write for prices. P. E. RENTZEL, DOVER, PA.

For Sale—12 Silver Laced Wyandotte Cockerels

and 12 Partridge strains. All early hatch. Write for prices. A. E. Seidel, Danville, Pa.

Tiffany's Superior Chicks for 1921

Reds and Leachons, Pekin, Rouen and Runner strains. Write for prices. TIFFANY BROS., PITTSBURGH, PA.

ADAMSON POULTRY FARM, R-39, Phoenixville, Pa.

ORLS IMPROVED WHITE LEGHORNS—Large

Chicks, bred from stock with high egg records and fine body quality. None better for fitting the egg business. Write for prices. ORLS WHITE LEGHORN FARMS, MARION, OHIO.

COCKERELS

Write for prices. IMEZ TAYLOR, Kelsey, N. Y. Dept. K.

CHICKS—S. C. White and Brown Leghorns, Harcel

and 1000 lbs. milk, 100 lbs. fat. Write for prices. THE CYCLONE HATCHERY, MILLERSBURG, PA.

PURE BRED GESE, Ducks, Turkeys, Chickens

Guinea, Doves, Hares, Hatching Eggs. Write for prices. H. H. FREED, Telford, Pa.

NO SINGLE COMB WHITE LEGHORN

Chicks, 100 per cent satisfaction. Write for prices. GEO. WALTER, SEVEN VALLEY, PA.

BABY CHICKS—Good high healthy chicks of show

quality at utility prices. Catalog free. SCARLE HATCHERY, SCARLE, OHIO.

BABY CHICKS from fine stock, to produce eggs

at utility prices. Catalog free. L. E. POULTRY FARM & HATCHERY, EDISON, O.

PUREBRED LIGHT BRAHMA COCKERELS from

fine stock, \$7.50 and \$10 each. Write for prices. BEN. TINDALL, EGG HARBOR, N. J.

BABY CHICKS—Six leading varieties. Heavy

laying. Bred from fine stock. Write for prices. RANDOM FARM, BOX 6, GENEVA, OHIO.

Veterinary

Conducted by W. C. Fair, V. S.

Advice thru this department is free to our subscribers. Each communication should state history and symptoms of the case in full, also the name and address of writer. Initials only will be published. We cannot assume responsibility for the use of this column, when properly preserved and classified, make one of the most valuable mediums for a farmer-veterinarian club.

Swine.—Rheumatism.—Rickets—I have a few shoats that are troubled with a sort of rheumatism, some of them are down on front knees, other stiff in hind quarters. J. C. S. Jeannette, Pa. Feed less corn and more oats, oil meal and roots; also, keep them dry and warm. Give each pig five grains of nitrate of potash at a dose in feed or water once a day.

Choke.—Have four shoats 4 months old that are thriving, but one of them acts rather strange. It will come to trough to eat, take 2 or 3 mouthfuls, suddenly back up, fall over, struggle a minute, then get up and commence to eat as well as ever. What can I do? S. L. R., York, Pa. A hungry pig will occasionally choke. He fills mouth too full of dry sticky food. When he chokes he can't stand up for any great length of time and down he goes. After the mouth and throat is emptied he will usually get up and commence to eat as though nothing had happened. Spread out the feed, in order that he will have to eat slower. Wet it.

Indigestion.—Condition Powder—I have two work horses that are well fed, not overworked, but they refuse to lay on flesh. Their dung has a strong odor. S. C. Daniels, Pa. Their teeth may require floating. Change feed and perhaps increase the amount. Give each horse a dram of powdered sulphate of iron, a tablespoonful of bicarbonate of soda and same quantity of powdered gentian in ground feed 2 or 3 times a day.

Worms.—Thin Horse—I recently purchased a horse that is troubled with large and small worms. He eats twice as much hay and grain as any of my other horses, but remains thin. If you will tell me what to give him I will surely follow directions. W. W. Newbold, N. J. Give one dram castor oil, 30 grains calomel and half an ounce of powdered gentian at a dose in soft feed daily for four days. Discontinue for a week and then repeat treatment. Give a tablespoonful of ground gentian and a teaspoonful of salt in feed twice a day.

Scours.—Rolls in Stall—I have a 6-year-old horse that rolls in the stable. I find that when he rolls he is trying to scratch his neck from behind his shoulder. When I rub his neck between his shoulders and rump he will quit eating, hold his upper lip up as if he enjoyed the sensation. I have clipped his mane off. How can I prevent him from heating his head on water, and relieve the itching parts with soap and water, then apply one part sulphur, half a part carbonate of potash and four parts fine hard 3 times a week to itchy parts of body. At the end of two weeks, dust on flowers of sulphur daily. Give him a dessert spoonful of Denon's Solution at dose in feed twice daily. Feed some roots, and ventilate your stable.

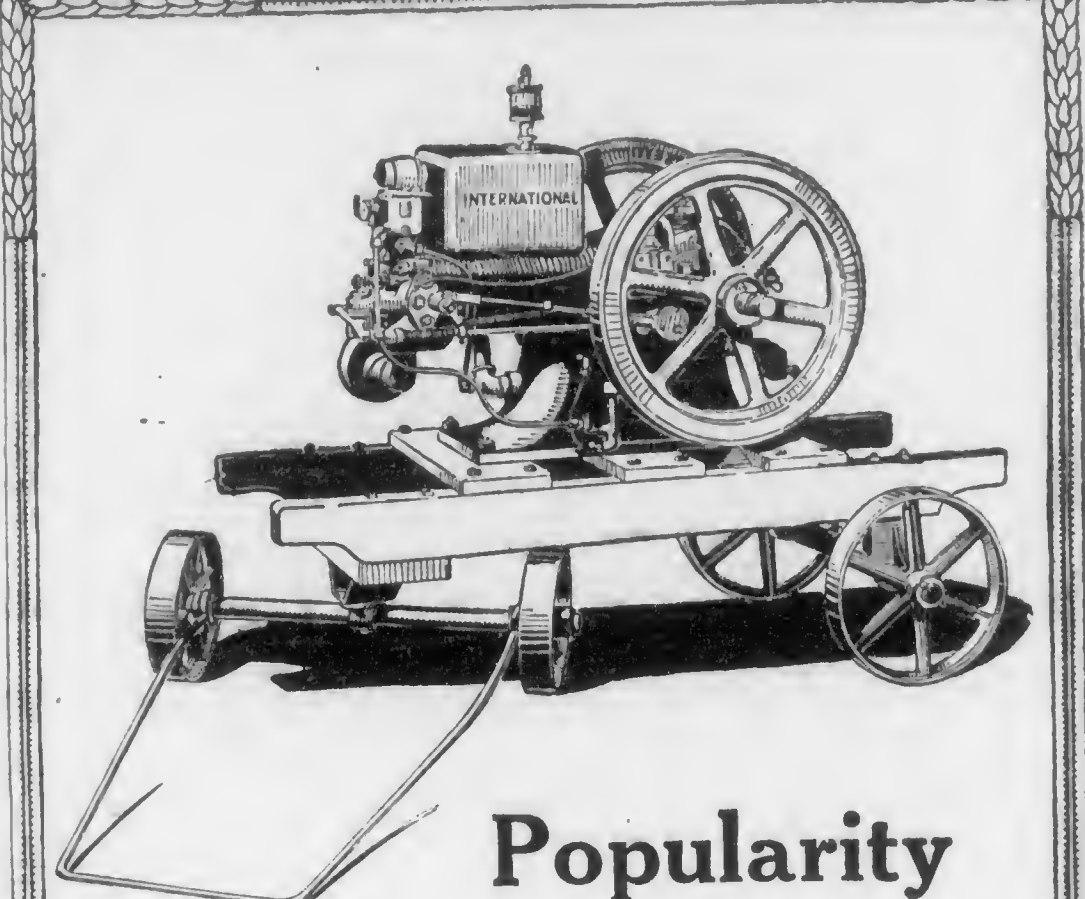
Too Much Ration.—My 15-year-old horse has splendid appetite and apparently in good health but he is inclined to nurse too much. C. D. W., Tionesta, Pa. Change feed and give a teaspoonful of ginger and a tablespoonful of powdered gentian in each feed. Usually the feeder can remedy an ailment of this kind.

Wind-Sucker.—Chronic Gastritis.—Have 7-year-old horse that is a hoarse sound and good worker, but soon as halter or bridle is put on him, he immediately works this back between his shoulders and rump he will quit eating, hold his upper lip up as if he enjoyed the sensation. I have clipped his mane off. How can I prevent him from heating his head on water, and relieve the itching parts with soap and water, then apply one part sulphur, half a part carbonate of potash and four parts fine hard 3 times a week to itchy parts of body. At the end of two weeks, dust on flowers of sulphur daily. Give him a dessert spoonful of Denon's Solution at dose in feed twice daily. Feed some roots, and ventilate your stable.

Knuckling.—Contracted Tendons—I have a gelding on his toes, one leg worse than the other. He knuckles badly. A horseman told me it was result of shortening of the tendons, and advised me to have the tendons welded on the top of the shoes, extending them 1 1/2 inches beyond toe of foot. M. A. G., Lewisburg, Pa. In such a case as this the tendons between the knee, or hock and fetlock may be divided, with a view of lengthening the tendons, but this is work for a skillful veterinarian, who has had experience in operating on cases of this kind. In chronic cases of knuckling, mild remedies have but little effect.

Tedious Churning.—I have a young cow that is carrying her second calf, due to come fresh the last of March and she appears to be well, but I must churn two hours to make butter. I have the cream warm enough for the butter is soft, but it has a bitter taste. She is fed hay once a day and corn fodder twice daily. She is also fed clover composed of corn and bran and a few potatoes. W. F. Felton, Pa. First of all the cream should be kept in good condition, never try to hold the cream too long. Be sure to cool the cream before mixing it with what you have on hand and of course it should be kept clean. When you have enough cream for churning, warm up to 70 degrees F., allow to sour or ripen at that temperature. When the cream is of the desired ripeness cool to the churning temperature or below 50 F. Usually the warmer the cream the quicker it churns into butter. Have the churn clean and rinse with cold water after pouring in the cream. Allowing milk to stand too long before the cream is skimmed may account for the butter having a bitter taste. Your cow is doubtless healthy, but you are milking her a little too early.

Dormicing.—I have a cow whose horns grow new quickly and she makes it necessary to cut a portion off every few months. Am I doing not knowing how much to saw off? Can she safely be dormiced? T. S. H. May, Lansing, N. Y. Have both horns taken off by some person who makes a business of doing this kind of work. Cutting the points off is not best practice.



Popularity

SEVERAL factors help to explain why International Engines are popular wherever they are used. But the most prominent reason is that they do the work their owners want done when it should be done.

International Engine owners know that if there is feed to grind, the International will do it. If there is water to pump, the International will pump it. The same is true with wood sawing, churning, chopping feed, fanning grain, etc., etc. The International will turn the trick, when you give it a chance.

In accomplishing this, International Engines use low-grade fuels. They are simple to operate—many farmer boys not yet in their teens start and operate International Engines with ease.

International Engines have built-in magnetos, replaceable cylinder liners, enclosed crank cases. They are hopper-cooled, and have many other valuable features. Made in 1 1/2, 3, 6, and 10 h. p. sizes.

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HARRIS BROTHERS CO. 35th and Iron St. CHICAGO -

Is the Milking Machine a Success?

This Symposium by Pennsylvania Farmer Readers Shows That It Is

SATISFACTORY AND ECONOMICAL

E. J. Rinehart, Maryland

HAVING had a machine for about two and a half years my knowledge of how a machine will hold out is limited somewhat. My brother purchased an individual pump milking system and it pleased him. I observed his milker in operation and to me it seemed to be a success.

Wishing to better milking conditions without such a large outlay of money, I purchased an individual pump system. The units are single, each unit milking one cow at a time and a pump goes with each unit. The test cups fit any sized teat. All four teats are milked at the same time and the suction is completely released at each stroke of the pump, which makes 52 strokes per minute. Two units and an extra pail cost me \$125. Two pulleys, 50 feet of shafting, the necessary boxes and hangers plus the cost of installation amounted to \$84.14. Having an engine and not wishing to move same it took more shafting.

A milker is not considered a paying investment with less than fifteen cows, unless the engine is used for other work. I milk twelve cows with a 2½ horsepower gasoline, air-cooled engine which runs on dry batteries. The engine pumps water while milking. At the first milking with a machine, the man that installed the system was present and all went well. After mastering the machine, it was found to be a dependable helper. It heats hired help as it never gets sick nor wants a holiday and milks the same on Saturday evening as any other evening. Milking becomes a uniform operation, with the last cow milked as clean and as fast as the first. Contented cows give more milk. A machine never swears nor beats the cows. The youngest son, age 14 years, has started the engine and milked the twelve cows.

One man can milk a larger herd of cows with machine and thereby solve the labor problem. My milker will not draw blood even if left on after all milk is drawn. Is it hard on cows? No, cows with sore teats, tender udders or hard milkers are more readily milked, than by hand. Cows with sore teats, have stood quietly for machine and kicked when milked by hand. Heifers take to a machine more readily than hand milking, while old cows have to be broke in. Machines are a boon in fly-time, for nervous cows or cows that have a leak in their teat. No more udder trouble was had, while using machine, than with hand milking. The engine struck for a new dry battery and hand milking was necessary. From the way the cows acted, the uniform action of the milker must be more pleasing to them than hand milking. Will it dry the cows off? Well one cow milked nearly until she calved. The milk being good and cow's condition not being noted she was not forced dry.

Of course, it takes extra time to wash and care for the machine, but the speed with which the milking is done makes up the extra time. It takes on the average 30 minutes to milk twelve cows. The more cows the greater the time saved. The experimental station states that the time required for hand milking and washing of the utensils is greater than the time required for machine milking and washing the machine. An expert hand milker might milk a free-milking cow as quick as a machine but for hard milking cows the machine will lead. I strip my cows while my brother does not. To my knowledge his cows have no more udder trouble than mine. My conclusion is that if you strip after a machine the cows will expect it.

Anyone who attends to details can make a suc-

cess of machine milking. While milk from a machine will show less sediment when strained, unless the machine kept clean hand drawn milk will have a lower bacterial count. Though a milker is complicated, milk with a low bacteria count can be produced. It is easier to keep a milker clean than a cream separator. Immediately after milking, while test cups are attached and the cups are immersed in a pail of cold water and the water is sucked thru the tubes. Then the lid and tubes are placed in a tub of water containing a chemical preparation similar to peroxide. A fresh mixture is made twice a week. The milker should be thoroughly washed each time sterilizing solution is made fresh. The tubes are cleaned like a gun barrel and the test cups are taken apart and washed; also, the valve is taken apart. This method is fairly good but the correct method is necessary for hot weather.

The total cost of my milking system was \$240.14. The items which make up the cost are: Lumber, \$30; pulleys, \$11.20; 2 units and extra pail, \$125; shafting, boxes, pump hooks, guides, etc., \$52.94 and cost of labor for installing system was \$20. There is a certain yearly expense even though machine is not used. The following items will have to be charged off.

Interest on \$220.14 at 6 per cent. \$13.20
Depreciation at 15 per cent. 34.02
Taxes 2.00

Total \$49.22
As milk is hard on dairy utensils 15 per cent depreciation ought not to be too high.

The minimum life of test cup mouthpieces is about six months, while the maximum is about a year. I have obtained the maximum this year by using a new set of mouthpieces on cows with small teats and when they become large the mouthpieces were used on the other unit. The tubes seem all right with the exception that they are shorter. When the tubes fail to grip the connections, I cut about an inch off of the end of the tube, in order to make it tight. I broke several glasses thru carelessness. The glasses enclose the valves. One unit has the original glass on. The leather on one pump has been renewed at a cost of 25 cents. Several drops of harness oil should be placed in the pumps daily.

The cost of repairs for 2½ years has been—Mouthpieces for test cups, \$4; pump leather, 25c; 3 glasses at \$1 each, \$3; total, \$7.25. A yearly cost of \$2.90 for repairs. The \$3 ought to be charged to carelessness as the glasses were broken in the dairy while in a hurry. About 100 gallons of gasoline are used yearly. The gas cost \$30.50 this year. Allowing one-third of the cost for running the cream separator would leave \$20.34. As I pump water while milking, the half of \$20.34 would be the average cost of operating the milker, or \$10.17.

Yearly cost of operation \$10.17
Yearly cost of repairs 2.90
Yearly cost of B. & K. chemical 5.00
Depreciation, taxes, etc. 49.22

Total \$67.29

I think that it would cost about two cents a cow for hand milking at the present time, hence:

Average yearly cost of hand milking, \$170.00
Yearly cost of pails, about 50.00

Cost of hand milking 220.00
Cost of machine milking 67.29

Profit on machine milking \$152.71
I would look for the following points in a milker were I in the market:

(1) Simplicity. (2) Efficiency. (3) Durability. (4) Ease of Cleaning. (5) Ease of operation (a) visibility; (b) power required, and (6) Cost (a) initial cost; (b) cost of operation; (c) maintenance. (7) How does it affect the cows? —C. J. Rinehart, Union Bridge, Md.

MILKING MACHINE VALUABLE ASSET

A. B. Huey, Chester Co., Pa.

My experience with a milking machine covers a period of about five years of actual operation and many years of observation. We in this country, are prone to look upon a mechanical milking machine as an experiment, forgetting or not knowing that in Australia, the home of the mechanical milker, over 70 per cent of the cows are milked mechanically and there are many patents on milkers. In New Zealand over 75 per cent of the cows are milked by machines and I saw in a New Zealand paper of recent date in which twelve distinct patents on mechanical milkers are advertised. I have a neighbor who installed a mechanical milker, and after some eight months' trial, pronounced it a failure—not that it would not milk the cows, but from the amount of udder trouble he had from some cause not known.

I had some 45 cows and a son of a naturally mechanical turn of mind. I decided I would try this discarded milker, install it and see what my results were. While we were installing the milker my son had reason to go thru a thorough Guernsey Dairy about 15 miles away, and he there found a milker of the same make in actual operation for several years.

At the time our milker was installed, my son had been keeping a record for a year and a half of what was being done every half hour of the day for the National Government. This record contains one and one-half year's of hand milking and one and one-half year's of machine milking of the three years the record which were kept. The cows were in a cow-testing association thru the period of these tabulations, so the facts deducted are as true as can be procured.

The Federal Department during this period was making tabulations on four farms in four states which form the basis of Bulletin 501, "Cost of Milk Production." I quote from this bulletin Page 11, comparing the four farms. "The lowest labor requirement for cow is on the Pennsylvania farm when the milk is handled quite efficiently and delivered at nearby railroad station. The use of a milking machine during 1913 made the man labor requirement 38 hours per cow less than for 1912. The actual time of milking was reduced about one-half. With the exception of the Pennsylvania farm, the average man labor requirement per cow exclusive of marketing, on each of the farms for all the years, is approximately 200 hours. This is equivalent to an average of 33 minutes per cow per day, 365 days in a year." Thirty-eight hours per cow saved, at 30c per hour, the price of labor thru here, would represent a saving by the use of a milker of \$11.40 per year, per cow.

Now, while some may be able to hire labor cheaper than this, I doubt whether the great majority can reduce much the actual time consumed. Any one much interested in costs of milk production, should read this Bulletin 501. It can readily be obtained by (Continued on Page 9)



Ayrshires for Porto Rico from Farm of W. E. Druckenmiller, Northumberland County, Pa.

Soils and Fertilizers

Conducted by Dr. J. G. Lipman

Our readers are invited to send us their problems on soils and fertilizers and they will be answered by Dr. Lipman in this column.

STARTING ALFALFA

"I have about twenty acres that I would like to seed to alfalfa. The soil is very poor and there are places where there is a heavy growth of wire grass. Will you please tell me how to fertilize this land, how to prepare the soil, what time to sow the seed and how much to use per acre? I am located near Red Bank."—F. F., Monmouth County, New Jersey.

F. F., New Jersey.—Good crops of alfalfa have been grown and are now being grown in the vicinity of Red Bank. Some trouble has been experienced from chickweed that in some fields has been crowding out the alfalfa. Other weeds are troublesome occasionally. For this reason, it is important to start with a clean seed bed. One of the effective ways for preparing a good seed bed for alfalfa would be to grow winter wheat and vetch or oats and Canada field peas. After the crop is harvested, the land should be plowed promptly and summer fallowed. In the case of

oats and peas about one and one-half bushels of Canada field peas per acre should be used. The crop might be harvested and fed green to stock or made into hay. It should be off the ground by the beginning of July. Prior to sowing the alfalfa, about August 20th in your locality, a good application of lime should be made. If ground limestone is used, the application should be at the rate of 3000 to 4000 pounds per acre. If hydrated lime is used, an application of one ton per acre should be made. After the lime is thoroughly harrowed into the soil, acid phosphate should be applied at the rate of 400 to 500 pounds per acre, and muriate of potash at the rate of 25 to 50 pounds per acre. The seed should be employed at the rate of 25 pounds per acre and may be sown by means of a wheelbarrow seeder—12½ pounds one way and a like amount in the other direction so as to assure an even distribution of the seed.

If alfalfa has not been grown on that field, it would be necessary to inoculate. Inoculation may be done by means of soil from an alfalfa field where there is a good stand of alfalfa. If alfalfa soil is used, care should be taken not to employ material from a field that is badly infested with chickweed or dandelions. The inoculation soil should be broadcasted at the rate of 300 to 400 pounds per acre and should be harrowed in prior to sowing the seed. In ordering alfalfa seed it would be well to stipulate American western grown seed.

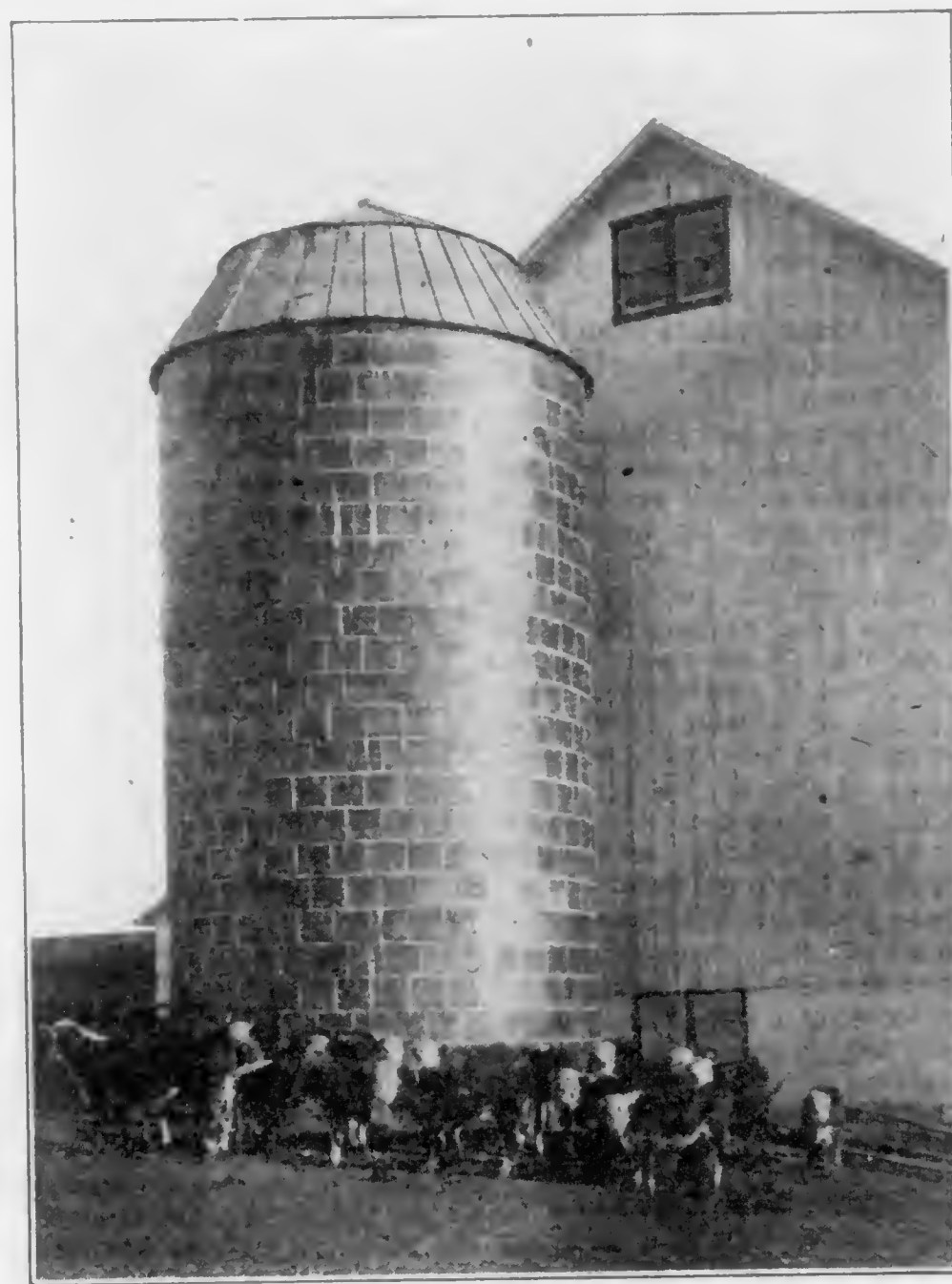
POTATO GROWING

"Will you please give me some information as to how I should go about it to increase my potato yield? Last year I got seven hundred and fifty bushels from five acres. Only about two-thirds of the crop came up due, I believe, to injury caused by the hot formaldehyde treatment. What fertilizers and what varieties of seed would you suggest for early and late crops? Can you give me some information concerning the inoculated sulphur treatment for scab? How can I identify potato leaf roll and mosaic? Are there any good modern books on potato culture?"—H. A. C., Montgomery County, Pa.

H. A. C., Pennsylvania.—It is well to remember that for the July potato crop it pays to use a generous supply of readily available plant-food. A 5-8-5 or a 5-10-5 fertilizer would probably give better results with Irish Cobbiers and Spaulding than would a 4-8-10. For the later crop a 4-8-6 would probably give fully as good results as a 4-8-10. Extensive experiments carried on at the New Jersey Station on different soil types and thru several seasons indicate that 5 to 6 per cent

of potash is practically the maximum percentage that could be used profitably. They also show that about 1600 pounds of fertilizer per acre, used in the row, will give the maximum profit. As the quality of the soil grows better, somewhat larger amounts of fertilizer will return the maximum profit, especially in a season of abundant rainfall. There are growers who use as much as 2500 or 3000 pounds per acre. These growers are careful not to put all of the fertilizer in the row, but to broadcast part of it before planting and to supply the rest in the row. Among the potato growers in Maine it is the practice to put part of the mixed fertilizer in the row and to broadcast the rest over the row as the potatoes are beginning to show above ground.

Inoculated sulfur consists of commercial flour sulfur inoculated with bacteria that have the ability to change the sulfur into sulfuric acid. Thanks to the presence of large numbers of these bacteria, the sulfur is changed more quickly, the soil is made sour in a shorter period of time and the potato scab fungus, therefore, checked in its development. The season of 1920 was the first during which inoculated sulfur was compared with uninoculated sulfur under field conditions. These experiments indicate that inoculated sulfur is more effective than the uninoculated sulfur for controlling potato scab. It is recommended that the formaldehyde treatment be employed as usual even where inoculated or uninoculated sulfur is



Vitrified Tile Silo on a Chester County, Pennsylvania, Farm

broadcasted for controlling potato scab. The numerous experiments at the New Jersey Station show that the most effective results with sulfur for controlling scab are obtained when 300 to 500 pounds are broadcasted and harrowed in immediately before planting the potatoes.

A number of books on potatoes have been published, among them "The Potato," by Grub; "The Potato," by Samuel Foster, and "The Potato," by A. W. Gilbert.

The following named characteristics appear in the case of Mosaic and leaf roll.

Mosaic.—The leaves of the affected plants are usually mottled with light and dark green areas. Because of the fact that the darker green areas grow faster than the lighter areas, the leaf is sometimes very much crinkled and the edges turned down. In severe cases the entire plant is dwarfed.

Leaf Roll.—This can be detected on the young plants by the rolling upward of the margin of the lowest leaves, which are somewhat thicker and more leathery than normal leaves. The tips

of the older plants are frequently lighter in color and die earlier than normal leaves. The older diseased plant is usually but not always smaller than the normal plant; all the leaves may roll and are likely to be smaller; the color lighter and the entire plant bushy in character.—J. G. Lipman.

FERTILIZER GOOD FOR YEARS

When we think about buying commercial fertilizer for our farm crops we figure that a certain crop will take 200 pounds to the acre and that it will cost about \$3. We think that this must be charged up to the crop for that year. I am one who figures just about this way. But I am beginning to see that the average application of fertilizer is not entirely taken up by a crop the first year. It is apt to last for at least another year, and sometimes more than that. I have had some good evidence of this from time to time lately.

A few weeks ago I was walking over a field that I had in onions in 1916. We used about 800 pounds to the acre of a good grade, complete fertilizer. We raised good onions, too, and supposed that the fertilizer had paid. In fact it had paid, too. The next year that field and some more on one side was planted to potatoes. There was a noticeable difference where the heavy application of fertilizer had been used.

After that the same field was put to wheat and one could see the difference between the old onion bed and the rest of it. It was seeded to clover after that and this year it raised field corn.

I have been in discussions about the amount of fertility left in the soil after a crop has taken its toll for a season. I used to estimate that a crop took 75 per cent the first year and about 25 per cent the following season. But after more experience and a lot of observation I find I can not tell. In the case just cited, where would the estimate come out?

I have in mind another field that was sown to onions. It was followed by sugar beets. The difference where the onions were raised with a heavy fertilizer application was plainly seen for the whole season. In fact the owner was afraid, until he came to lift the and top the beets, that he would have all tops and no roots to the beets. However, I think he got about 14 tons to the acre. Potatoes followed that beet crop and still there was some difference.

There are two things that I learn from this sort of experience and observation. One is that there is no likelihood that a crop will use 100 per cent of the fertilizer the first year, and the second is that the larger applications of fertilizer pay the best. The application of 100 pounds of 16 per cent acid phosphate to the acre will not be very noticeable the next year, though there will be some evidence of course. I am coming to believe that the application of less than 200 pounds

of any fertilizer to the acre pays a small dividend. I know that I am getting a better return on my investment since I have been using the bigger applications. I believe we farmers are just beginning to use commercial fertilizer intelligently. However, I don't care to detract anything from the value of clovers and manure as maintainers of soil fertility. They have their place but the place is bigger and more important if it is emphasized by the use of commercial fertilizers.—Earl Rogers.

These days Will Prosper is selecting his seed corn, his brood sows, and his fence posts for next spring, while his neighbor, Bill Thriftless, is sitting in the small town barber shop selecting the next cabinet for Mr. Harding.

Then there is an Atchison man who is so disagreeable that if he were to commit a crime he would wait until five minutes after press time to do it.—Carl Brown.



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Contributing Editors
DR. JACOB G. LIPMAN
DR. W. C. FAIR, V.S.

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PHILADELPHIA, PA., FEBRUARY 12, 1921.

VOLUME 49 NUMBER 7

OUR JOB is to serve our readers. Whenever you are puzzled, write to us and we will help you if we can.
—The Editors

Wars are not paid for at the time—the bill comes later—Benjamin Franklin

Farm Bureau Activity

INFORMATION coming to this office shows that the activities being directed towards increasing the membership in farm bureaus are bringing results. The campaign in New Jersey is progressing very satisfactorily and thousands are being enrolled. In Delaware there is a state wide interest and the movement is enrolling a larger number of farmers than were ever before organized for one purpose. Several counties in Pennsylvania are organizing upon a paid membership basis and the indications are that the plan will become very general before the year is out.

Daylight-Saving Referendum

ANY UNCERTAINTY as to the attitude of farmers on the question of the so-called daylight saving proposition may be promptly dissipated by seeing the flood of letters and petitions against the plan now being received by Pennsylvania Farmer. Never before have we received such a response to an inquiry as comes from the blank referendum published in our issue of January 29. Within one week after the paper was mailed we received thousands of names protesting against the daylight-saving plan and not a single one in favor of it, altho we agreed to present the pleas of proponents as well as those of opponents. In scores of instances the blank was not only filled but additional paper was added and long lists of names were secured. One man writes that he took the referendum blank to a public sale, tacked it on the side of a barn and placed blank paper beneath. One hundred and three names were added without solicitation.

A bill has been presented to the Pennsylvania Legislature which would establish daylight saving in the state from April to September. Repeal bills have been offered in the Legislatures of New York and New Jersey. We shall be glad to make the best possible use of the opposing petitions by presenting them personally to the leaders or committees in all the states where they will be most effective.

Help Your College

IT IS unfortunate that an institution as vital to the people of Pennsylvania as is State College should be compelled to go before the Legislature every two years and plead for money. But since no other means of providing funds for its existence has yet been devised it is duty of the

Pennsylvania Farmer

farmers to assist the authorities in impressing the state officials with the need of generous support, at least so far as the agricultural college and experiment station is concerned. Farmers who have been to the many instructive gatherings at State College and have seen what is being done have been impressed with the need of larger funds to carry out the work successfully, and to provide for the thousands of boys and girls who wish to prepare themselves for successful life in the country. No institution in the state has done more for all the people of the Commonwealth than the experiment station, yet the niggardly sums appropriated have not enabled them to carry out more than a fraction of what could and should be done.

Farmers should throw the weight of their influence in favor of granting what the officials ask. We believe they are to be relied upon to know what should be done and to spend the money advantageously.

The Emergency Tariff Bill

THE MORE or less farcical hearings which are being held in Washington on the emergency tariff bill bring out some humorous inconsistencies. One of the most evident features is the fact that every industry and every product needs quick and special attention to save it from ruin, altho the bill was hatched for the ostensible purpose of affording relief to certain agricultural products to prevent further price reductions. One of the witnesses before the committee was a clothing manufacturer from New York who pleaded with tears in his voice for protection in the clothing business, while at the same time he opposed placing a duty on wool. At this writing there seems small prospect of the emergency tariff bill passing at this session. It is very probable that the whole matter of tariff revision will be left to the special session which will probably be called by Mr. Harding after he is inaugurated. When the matter comes up at that time it is probable that some farm leaders who have been especially insistent during the past two months may find that they were nibbling at a baited hook.

Swindlers and Thugs

THE PAPERS are full of stories giving accounts of how people are relieved of their money and valuables. Some of these human vultures use a blackjack, render their victim unconscious and go thru his pockets. Others use a wiley tongue, put their victim's good sense out of commission and sell them some worthless stock or securities.

A reader of Pennsylvania Farmer living in Maryland writes that one of the latter brand of hold-up men was doing business lately in his community. He gave his residence as Philadelphia and his mission was to organize the farmers into a co-operative marketing association; membership fee, \$25. He pretended that he had a five-year contract with leading city hotels to furnish them produce at good prices. It is estimated that he took \$500 out of that community.

Looking at it from a distance you will say, "How could farmers be so foolish?" But something similar has been done at some time in nearly every community. It is the ability of a glib tongue to overcome the better sense of a credulous but greedy mind. In spite of all the admonition to beware of the schemes of strangers, crooks continue to do business. There may be some cheap notoriety and glory in being black-jacked, but there is absolutely none in being enchured.

Advertising Products

PENNSYLVANIA FARMER has for years advocated the practice of advertising the products of the farm and of individual farms. This is an age of advertising and intelligent readers scan the advertising columns quite as carefully as they do the editorial matter. Direct selling is especially practicable here in the East where most farmers are within easy auto distance of good markets. All that is necessary is to make it generally known what is for sale, and if it is established that the products are of good quality and well graded little trouble is experienced in

finding buyers. We have a good story illustrating the success of this plan on a farm in southeastern Pennsylvania which we will publish soon.

The Director of Markets of New Jersey urges the practice of advertising upon farmers in these words: "The time has come in the farming industry when the grower must look as carefully to the marketing of his goods as he does to the growing of them. In many localities newspaper advertising offers the opportunity of a direct sales route from the farm to the kitchen of the consumer for fresh fruit, vegetables, poultry and dairy products."

Use the Lead Pencil

YOU CAN buy a good lead pencil for five cents. A tablet of blank paper can be purchased for ten cents; total, fifteen cents.

The attention of the average mind on the average farm, if given to using these items frequently, will bring greater returns than spending all the time wearing out the grindstone. If ever there was a more unjustifiable excuse given for not keeping accounts than the one, "I haven't time," we do not know of it. But it is not only in keeping books that the average farmer falls down. He fails too often to use his lead pencil in advance of a decision. By using known facts and available data it is usually possible to figure out in advance whether it is wise to continue a given course or to take up a different one. It is the men who use their pencils and scratch paper who lead in every community.

Last year some farmers neglected to sow the usual amount of grass seed because seed was unusually high in price, so their fields are bare and they will be short of hay. Figuring it down to the cost of seed per acre would have showed how foolish they were to neglect it. A few let their harvest spoil because labor was high and unavailable. The pencil would have proven machinery a good investment. All other business is done on the basis of an estimate made beforehand. While farming has many uncertain factors, this should not eliminate the necessity for making careful calculations to find what is the most economical course to pursue.

Keep a pencil handy and keep its point hot.

Our Washington Letter

The House Committee on Agriculture, after a lengthy discussion of the Gronna packer regulation bill, recently passed in the Senate, refused to grant any more hearings on the bill, and a motion to substitute a House bill for the Senate measure was defeated.

Friends of the big-five packers claim that the Senate bill, if it should become a law, would include under its provisions every one that has anything to do with the preparation of live stock products, tanners, shoe manufacturers, wool and clothing manufacturers, creameries and cheese factories, subjecting them to the same general regulation as that provided for the meat packers. Friends of the Senate bill assert that no such construction is justified.

Knowing that a single amendment would throw the bill into conference if it passed the House, and thereby secure its failure, owing to the few days left of the session, enemies of the measure have made repeated attempts to add amendments. Those members of the committee favoring the bill by their opposition to the amendments are as follows: Tincher of Kansas, Voigt of Wisconsin, McLaughlin of Nebraska, Hulings of Pennsylvania, Jacobway of Arkansas, Young of Texas, Lee of Georgia, and Rubey of Missouri.

Continuing his testimony before the committee on agriculture on the anti-grain gambling bills, Clifford Thorne, counsel for the American Farm Bureau Federation, said that if it was proper to interfere with the business of the Louisiana State lottery, with slavery and with pool rooms, it is right to prohibit gambling on the Chicago Board of Trade. You should ultimately eliminate selling of grain by people who do not have any grain to sell. If other industries can get along without gambling dens, the grain business can. Mr. Thorne suggested a method of insurance to replace the present hedging system. He also advocated the tax feature of the Capper-Tincher bill.

Senator Calder of New York proposes amendments to the revenue law exempting farm and home mortgages from taxation. He argues that this would make mortgages on farms more attractive as investments and thereby aid the farmers to secure loans. He says "The drift of money from the purchase of mortgages and other securities of the farmers has been so great, and is continuing at such a rate, that unless we forego our need for agricultural revival until all tax

exemptions are abolished, we must adopt temporary measures of relief."

A joint resolution is being considered by the House Committee on Agriculture, authorizing the President to require the United States Sugar Equalization Board to take over and dispose of 13,902 tons of sugar imported last year from the Argentine republic. This sugar was brought into this country by an importing firm who in turn turned it over to a distributing concern to sell to wholesalers. The deal was made on the advice of the Federal Department of Justice. After having made itself decidedly unpopular by its Louisiana sugar transaction the department evidently decided to mollify public opinion by attempting to break the market with this Argentine sugar, but unfortunately for the importers the break came too soon and left them with the sugar on their hands. According to Mr. Figg, formerly of the Department of Justice, who promoted this Argentine sugar deal, the government is under no legal obligations to reimburse the importers and dealers for their losses in the deal, but it is under moral obligation to do so. The amount involved is between two and three million dollars.

A statement has been issued by former Secretary of the Treasury Carter Glass of Virginia, giving his opinion that not a farmer in the entire country will be able to borrow a dollar from the War Finance Corporation unless actually engaged in the exporting business. The War Finance Corporation has been open for business nearly a month yet not a single exporting firm handling farm products has made application for a loan. If the farmers profit by the rehabilitation of the War Finance Corporation it is believed that it will be accomplished thru exporting concerns developed and controlled by the farm organizations.

A conference of co-operative extension work directors was held in Washington February 1-3, with nearly all the states represented. Dr. A. C. True, director of the States Relations Service, presided.

In his opening address, Secretary of Agriculture Meredith spoke of the lack of understanding of the agricultural editors, in regard to the work of the Department of Agriculture. Much of the criticism of the department is due to the failure of the editors to avail themselves of the means of keeping in touch with the department activities.

The world market situation was discussed by Professor E. C. Montgomery of the Bureau of Markets. According to Professor Montgomery trade promotion is only a small part of the foreign market service being developed in the Bureau of Markets. The principal object of the foreign market service is to summarize the world situation with regard to staple commodities. What the farmers want is a line on the future demand of the market. Information is now available which if organized, would give farmers a pretty good angle on supply and demand.

The United States is rapidly becoming an importing nation, said Assistant Secretary of Agriculture E. D. Ball. America today is shipping in more food rated in dollars than she is exporting. We shall have to develop a practical national policy if we are to keep this country a food exporting nation.—Elmer E. Reynolds.

HARRISBURG LETTER

Legislative Seeding Time.—While there are more bills in the hands of committees of the assembly now than usual at this time only or two of the big pieces of legislation have been presented and the so-called programmed bills have been very slow in making their appearance. The bills on the committee lists are largely of the kind that make the state's printing a burden. Many of them have been drawn to meet purely local conditions and some would overturn law applying to the whole state to cure a situation in which few people are interested. Other bills are frankly presented to make political capital. Unfortunately but fortunately, too, for the state government there is no way whereby the presentation of legislation can be regulated. The constitution, very wisely, it may be said, puts no check on such matters, but leaves it to the good sense of the legislators. Sometimes this quality does not always work except for the advantage of the printer and the vanity of the legislator or the man who inspires the bill. Out of close to 500 bills in hand as this is written, it may be said sixty to seventy are important, probably 100 carry appropriations, and some of those could be left off without injuring the state, and the rest bid fair to remain in committee. The real truth of the matter is there was so much talk about programs that the people in charge either did not get time to write out the bills or else wanted to see how the suggestions took with the general assembly. Now the assurance is given that the bills are to be in hand before the end of the month, including the Governor's bills; all administration measures and the various codes. After that there will be only what the English call supply bills and which are known here as appropriations.

Can Finish in April.—With these bills in hand

Pennsylvania Farmer

by March 1 and the state officials and political leaders in accord, members of the Legislature say the session can be closed with April. Sentiment in favor of adjourning before May has been growing, especially since members from a distance have found the city members disposed to hustle home Wednesdays and leave the latter half of the week go hang. With a minimum of legislation on the programs and bills well developed there are only the revenue proposition and apportionment remaining to cause discussions and a firm hand, such as used to be exercised on various other measures, can accomplish much this session. But whether the men who run things now have the courage to undertake a systematic reduction of charitable appropriation demands and to insist upon as few general laws as possible is a much discussed topic.

Crop Insurance Certain.—State Insurance Department officials have been in conference with the members of the legislative committees on insurance and say that there is no doubt but that the proposed authorization of insurance of crops against pests, frosts and other damaging elements will be enacted. There will also be some efforts to get the mutual fire insurance companies to align themselves more definitely with the state so that insurance as relates to rural communities will be along regulated lines.

Shrinkage of Values.—Figures being compiled at the Department of Agriculture indicate the shrinkage of farm values has been high in the millions. In some counties the value of livestock has shown a drop which the farmers hope will be realized by the assessors, while the crops remaining in barns have gone away down in value. The figures tell an interesting story of what has happened.

More Ready to Work.—Reports of the State Employment Bureau show a greater willingness on the part of many men connected with industries to work on the farm than has been known for half a dozen years and in central counties farmers ought to have no trouble recruiting men, provided the men can realize the difference between the country scale of wages and what used to be paid in the city. State authorities have received numerous requests for information about the dairy farmers from Holland and other countries who are looking this way and believe eventually the presence of foreign element accustomed to agriculture will go a long way toward getting the native born back to the soil.

Big Revenue Producer.—Director James Foust's report for 1920 shows the revenue from his bureau to have been over \$626,000, which is \$75,000 above the previous record. In the neighborhood of \$600,000 of this sum is believed to have come from oleomargarine licenses, which some ambitious legislators plan to abolish. If is doubtful whether the state will consent to give up either this revenue or the regulation of the substitute.

Railroads Asked to Help.—The railroads of the state have been asked by Commissioner Gifford Pinchot to get busy early this year in making safety strips along their rails in wooded sections. It is believed this plan will materially reduce forest fire causes. Incidentally, the state will have for distribution this year millions of seedling trees, and will plant more than ever. Farmers may obtain them for reforesting or for planting on land which cannot be profitably worked.

New Water Grab In.—Among the late comers in legislation is a bill which would give water companies back the right to exercise eminent domain, or take private land for water purposes, which was taken away by the Pennypacker act of 1905. This bill was defeated last session, but it is back again in influential hands, the plea being made it is needed to insure the future water supply of great communities.—Hamilton, Harrisburg.

NEW YORK LETTER

State Grange.—This body, with 1500 delegates, is in session in Utica this week. It has sent a special commission to demand a repeal of the daylight saving law at the hearing in Albany today. There are now 134,430 grange members in the state. State Master Giles in his address opposed the St. Lawrence river ship route from the lakes to the sea, as it means a total loss of the present canal. He criticized the state conservation commission as being administered in the interests of sportsmen alone. He condemned the Ralston-Nolan bill, and urged a more equitable system of taxation, with no distinction between real and personal property. He supported the department of farms and markets and urged the Grange to help it in formulating an agricultural policy.

Daylight Saving.—Merchants are seeing the doom of daylight saving and are rallying at Albany requesting that the bill be changed to permit 5 months of daylight saving instead of seven months.

Growers Advised.—The New York Central Marketing Association, composed of growers of potatoes and cabbage is now advised by the North American Fruit Exchange which is handling their products to liberate these crops at once. Hold-backs have failed to decrease the surplus on the market due to liberal importations. Shrinkage has been great, and in the case of cabbage the price

is not so good as it was last fall, now \$8 to \$8.50 per ton, not as much as its feeding value amounts to when fed to stock. Some farmers will not open their silos, as they are feeding heavily of cabbage and have quantities yet to feed. Local buyers of potatoes are offering 40 to 50 cents per bushel at loading points. The fruit exchange is quoting \$1 to \$1.10 per hundred pounds for potatoes f. o. b. and is urging careful grading. At present the market is very slow—75 per cent of sales being on consignment.

Milk Drops.—One milk producer near Lyons stepped into the distribution game and peddled milk at 12 cents, causing all the dealers of the city to make a drop of 2 cents to meet his price. Now one dealer offers milk in 5 quart lots at 10 cents a quart. This is the result of farmers entering into the matter, and is the best way to secure the rights of consumers, and to get enough milk consumed to take care of the output.

Ithaca's Milk War.—A dealers' milk war in Ithaca was precipitated when the new purchasers of the sanitary milk plant followed the League price and dropped to 13 then to 12 cents. The Syracuse milk war seems to be resulting in much good to consumers and by judicious advertising the farmers' plant is extending the use of its milk in that city.

Milk Outlook.—Despite prophesies the milk situation has not improved with the New Year. Figures show that the consumption of milk in this country has not been developed nearly so well as in European countries. It will take time to put the milk industry back on its feet again. The pooling plan is growing more rapidly of late. Madison County was at first slow to sign. It now has over 1300 signers, with the sentiment growing.

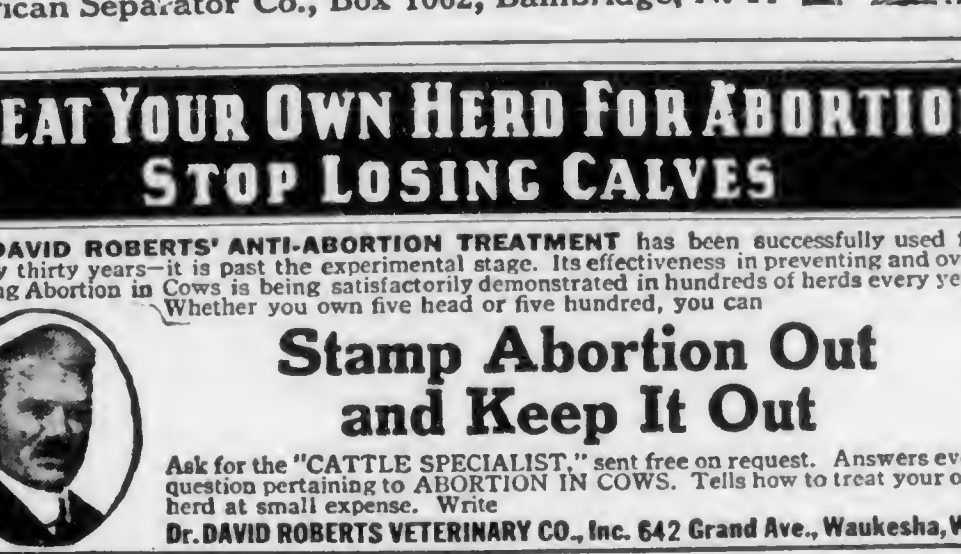
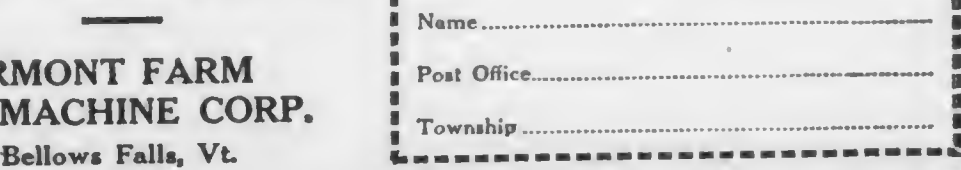
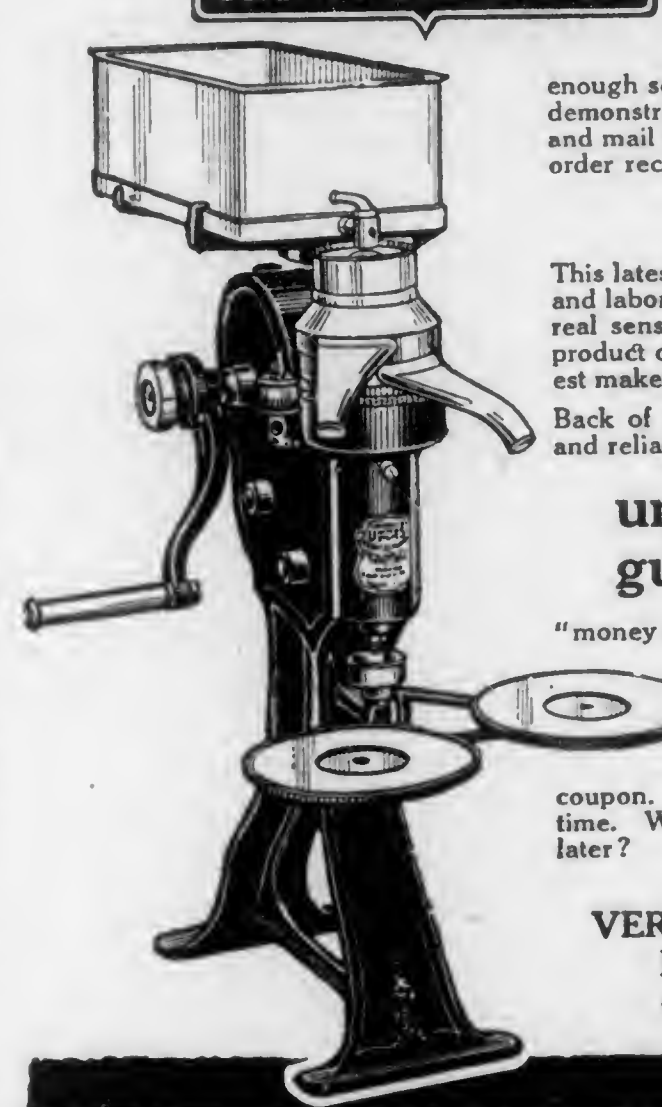
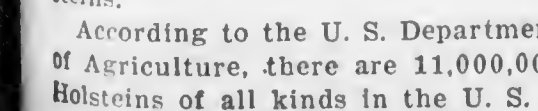
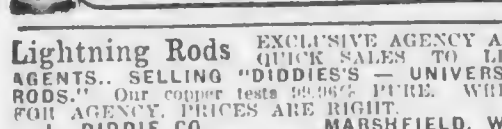
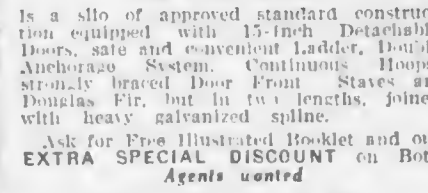
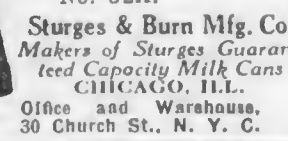
NEW JERSEY NEWS

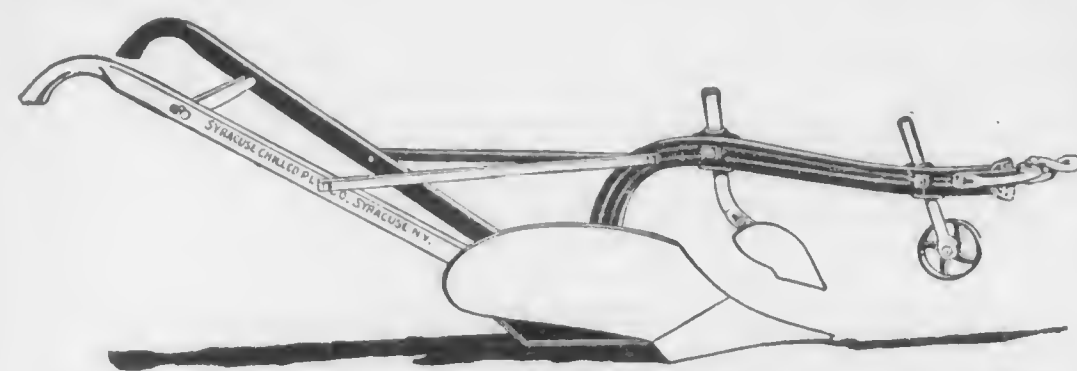
Legislation Passed.—The following bills of interest to rural sections of New Jersey have been passed by the New Jersey House: Elliot, Essex—Amends the jury act, so as to provide that two years must elapse before a juror can serve on another jury; Roberts, Burlington—Eliminates statutory salaries in the Department of Agriculture and places the same under the standardization plan for connecting of the New Jersey Highway system with this state and Delaware; Elliot, Essex—Increasing salaries of members of volunteer fire departments from \$12 to \$25 per year; Rowland, Camden—Allows fish and game wardens to carry firearms while on duty without having permits; Owen, Morris—Authorizes the appointment of an additional fish and game warden for each county. New House bills introduced are: Guthrie, Mercer—Requires second-class counties to furnish stone to cities, towns, etc.; Blair, Atlantic—Prohibits hunters for wild deer from carrying gun of a smaller caliber than twelve gauge; Corio, Atlantic—Increases fees for justices of the peace in criminal proceedings, allowing one dollar for complaint and the taking of affidavit; Evans, Passaic—Permits juries in civil action to give verdict on vote of three-fourths of members; Stephens, Hudson—Prevents closed specifications in awarding contracts for state roads.

Among bills passed in the Senate is one permitting women to serve on election boards.

Fight Over Architect.—A bitter fight is now being waged in the Legislature over legislation that would place the Department of Architect of the State in the hands of Burdette G. Lewis, State Commissioner of Institutions and Agencies, who has charge of the buildings of the Vineland Institutions for Soldiers and Feeble-minded and other charitable institutions and penal institutions of New Jersey. It is charged that Francis H. Bent, the State Architect, has been incompetent on operations at the Vineland homes and other places. The members of the State Board of Education, however, are among some people who do not from present indications feel that such is the case, as they have adopted a resolution by which Bent is commended in his work on educational buildings in the state.

Utility Board Bill.—The bill by Senator Wallworth, of Camden, providing for the appointment of a Public Utility Commission of three members at a salary of \$12,000 per year for each member has passed the Senate and will in all likelihood pass the House. This board will take the place of the ousted commission, which despite the fact that it has appealed the move of Governor Edwards in removing them from office for neglect of duty and misconduct in office, will be relegated to the rear, if the utility bill is signed by the Governor. It is not likely that Edwards will affix his signature to the measure, however, as he has been held up for a long time by the Senate in confirming nominations sent to that body by him of five members of another utility board. If the Governor vetoes the bill, the Republican Legislature can override the veto and have a new board of a smaller number. Residents of the rural sections of the state, as well as those in the populous centres, are clamoring for a commission that will be able to function on lowering of rates of public utilities, to gas and electricity. It is well on rates relating to gas and electricity. It is claimed that too much attention is being given to politics and that the interests of the taxpayers are not being taken into consideration.—Kelly, Trenton.





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HORTICULTURE



Pruning Small Fruits

SOMETIME ago a neighbor asked me to prune his grape vine. I found a thick tangle of vines that could not develop and ripen a crop of fruit. After pruning the vine, which was a hard problem after it had been left so long, I went over his place and saw patches of blackberries, raspberries and currants that had been left to grow naturally after planting. Like the grape vine, they were clumps of new and old wood, which the owner told me had born small crops of inferior fruit. After one buys plants and fits the ground for them and does the work of planting and putting up supports, he should not lose his work, when a little pruning and care at the right time would result in plenty of fine fruit.

Many people have not made a study of pruning and have told me they would not know how to do the pruning if they should try to.

The most of the fruits should be pruned when dormant or defoliated, but some of the cane fruits may be

this to the wires above something like an inverted T, but there may be several upright stems growing from the base vine on the first wire. When the base vine is established the pruning consists in cutting back the upright vines so as to leave spurs for the new growth to start from, for the fruit is born on the new wood that grows the same year.

The tender varieties of grapes should be pruned by the renewal system. This consists in growing renewal vines before the fruiting vines get too large to lay down for winter protection. If it is the three-year renewal system the three-year old vines will be cut off after the third year and the vines which have been growing for two years will take their place for the fruiting vines. The two-year renewal system may be used when the vines get too large for laying down, in three years and the method is the same as the three-year system. With either system, put down the vines late in the fall and shorten them about one-third and



View of a Portion of New Jersey Products Show. Pennsylvania Farmer Solicitors at Left

cut back and thinned in the growing season. The hardness of fruits is a factor that may determine the method of pruning, and with some the bleeding and flow of sap the time of pruning. In my locality in southeastern New York, grapes can be safely pruned from the time the leaves are off in the fall up to the first part of April. It is better to prune early enough so there will be a searing of the wounds before the sap starts in the spring. If one lives in a locality where some varieties of grapes can be grown without winter protection he may use a plan of pruning by which the vine may be left on the trellis or wires. In my section in perhaps four years out of five years there will be injury to More's Early, More's Diamond and Delaware if left on the supports. Niagara and Winchell, I always prune by a method by which I can protect them in winter.

The most hardy grapes I train to three wires. The wires are put up the second year after planting. The top wire is six feet from the ground. In starting the vine two of the strongest vines are tied to the bottom wire. Lateral vines are trained from

prune the side shoots back to spurs. Three or four fruiting canes are enough.

Blackberries

As with grapes one needs to prune blackberries by a system adapted to the variety and the locality in which it is grown. The ideal way for the hardy kinds is to grow them in tree form. This is done by thinning the new canes which start to grow in the spring to an average distance of about one foot apart and pinch them off when two or three feet high. Side shoots then start until there is a bush in tree form. The canes are best supported by setting posts five feet high several feet apart, nailing arms to the tops about three feet long and fastening smooth fence wire to the ends of the arms which which support the canes on either side. When the canes have borne a crop it is better to cut them out and let the new one have the right-of-way.

The tender varieties of Blackberries and raspberries we can handle in the same way.

Thin the new growth in the early summer so they will not stand too thick in the rows, but do not pinch

off the tops for we do not want a stocky, thick cane for laying down. Just before the ground freezes for winter, shorten the canes about one-third, dig away the soil on one side and carefully bend them over until they lay flat on the ground. They may be pegged down with staples or held with weights. They will need only a slight covering and in most localities not any. I find it necessary to protect in this way, Rathbun and Erie blackberries, but Snyder, Eldorado, and Taylor seldom need protection. I lay down Cuthbert and Golden Queen raspberries in the same way. Blackcaps, and the purple kinds are generally hardy, except the Gregg, which can be grown by system advised for the tender blackberries.

Bush Fruits

Currants and gooseberries require only dormant pruning which is best done in the late fall but can be done anytime before leaving out. Whether one grows these by tree or bush form is a matter of taste. The bush form will produce the most fruit but the tree form is more ornamental. After three or four years from planting it is a good thing to practice renewal pruning. This is cutting back apart of the oldest wood each year so new shoots will start for bearing fruit the next year. In this way the bushes can be kept bearing well for many years.—W. H. Jenkins.

ORCHARDING IN PENNSYLVANIA

Speaking before the State Horticultural Association which met during the State Products Show, Dr. S. W. Fletcher of State College said:

"We have been the innocent victims of a combination of circumstances that is not likely to occur again in a generation. These include the war readjustment period, a presidential year, tight money, miserable transportation service, exorbitant freight rates, packages scarce and costly, very little demand for by-products and high prices for labor and supplies, which make a combination hard to beat. Other specialists and even general farmers are in the same boat. We are all caught in the readjustment web that we have known all along was being spun for us. But there are other years coming, and some of them will be good."

"Some of our people were getting too cocky. This trying season is going to be a good thing for the apple industry of Pennsylvania. The contrast between 1919 and 1920 would be tragic were it not so funny. In 1919 apple prices were high and there was nothing but rosy tinted optimism. The papers were full of tales of fortunes made in apple growing almost over night. Some orchards sold for \$1000 an acre and the 1919 crop in some sections netted that amount to the acre. Orchard stock companies sprang up like mushrooms. Some people deluded themselves into believing that an acre of apple orchard reasonably might be expected to average \$1000 an acre annually, over a series of years."

"The awakening from this Arabian Night's dream of easy riches has been painful but salutary. Some who paid big prices are wearing long faces now and their pocketbooks are flat, but their vision is clearer. This year will be worth while if it freezes out of the apple business the speculators and get-rich-quick men and leaves the industry in the hands of the bona fide growers. There is no room for weak-kneed and faint heart—(Continued on Page 22).

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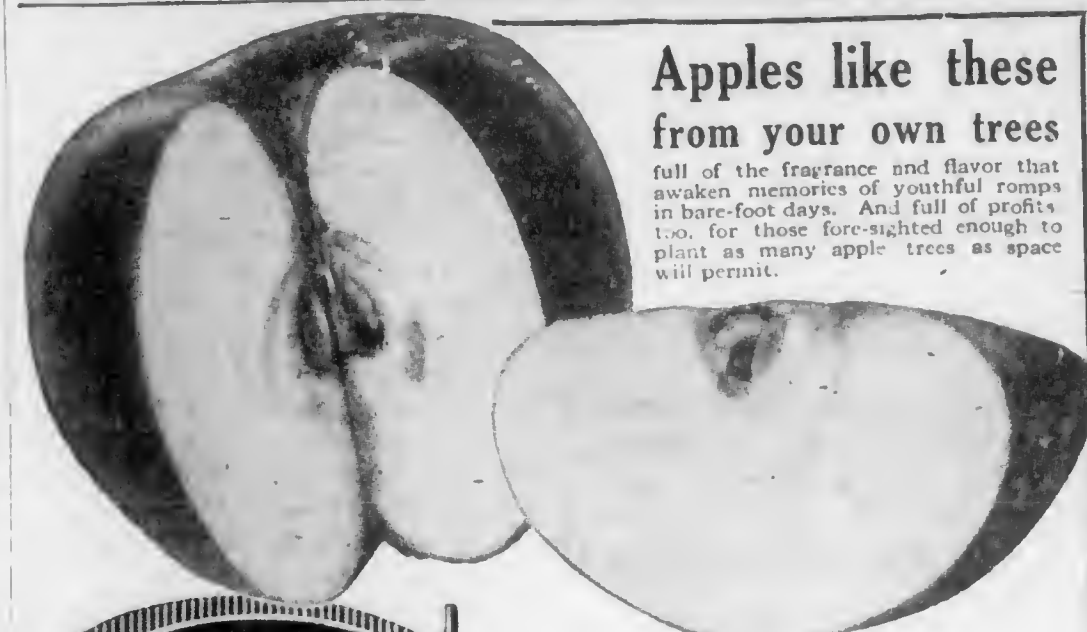
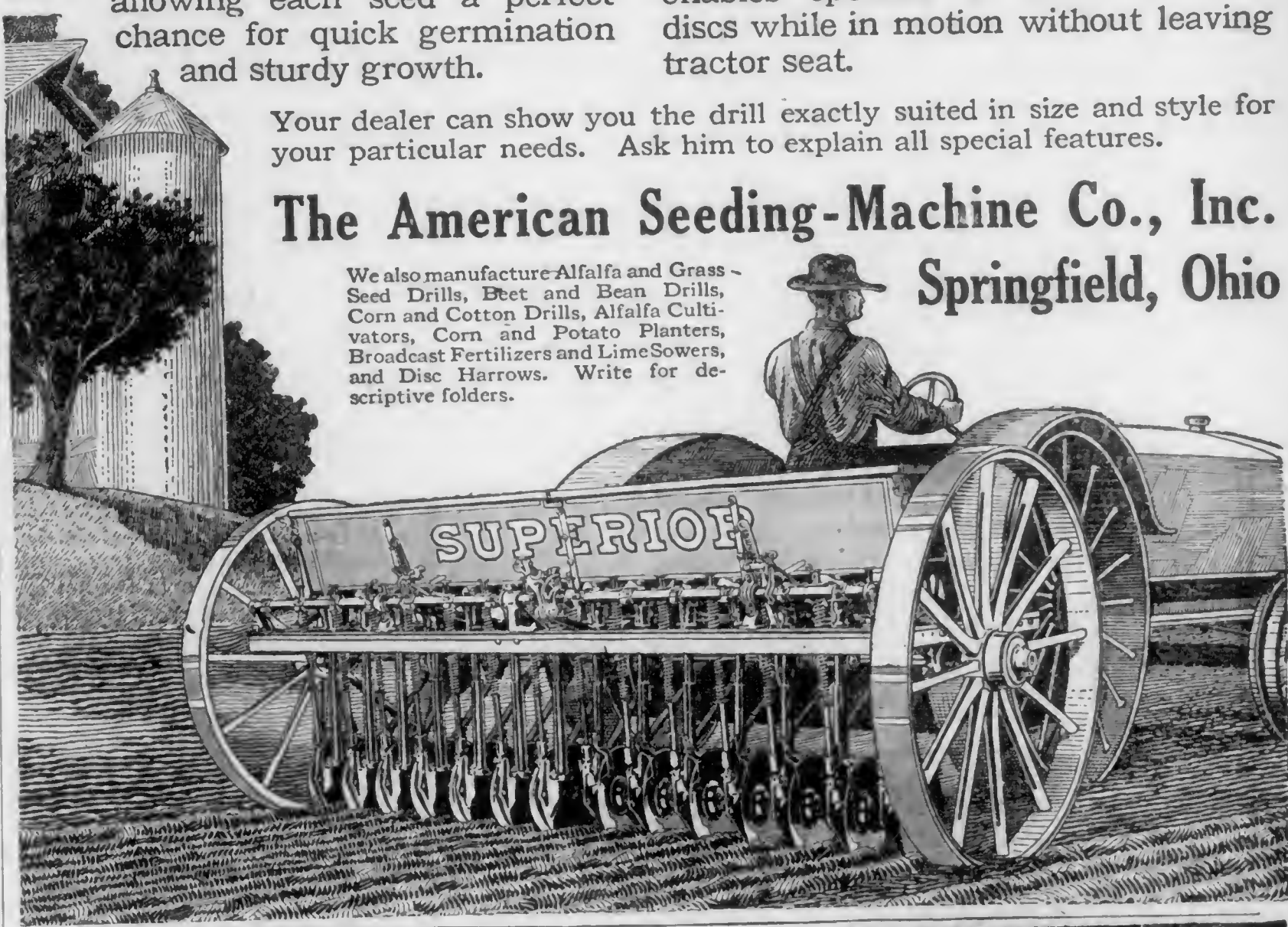
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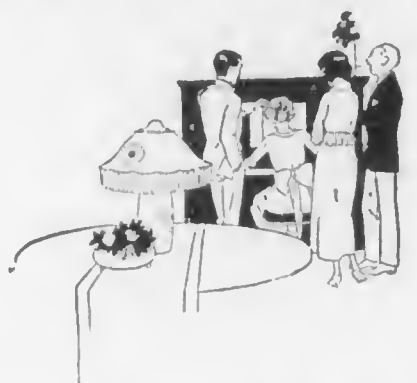
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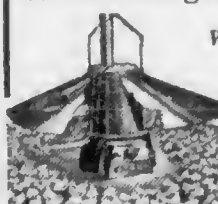
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POULTRY

Management of Incubators

By R. G. KIRBY

THE first step in success with incubators is to obtain hatching eggs from vigorous stock that have not been forced for winter eggs. Then a well-built machine must be obtained and operated according to the manufacturer's directions. We have learned that this pays. The practical poultryman soon learns many points about artificial hatching and it is seldom necessary to use the directions after the first year. The beginner will possibly enjoy reading of the points which help to make a hatch a success regardless of the make of the machine.

Before starting a hot water machine, test it for leaks. We once found a small hole rusted in a pipe and a serious loss was averted by locating it before placing eggs in the machine. Compare the thermometer with one of known accuracy if there is any doubt of its value. Use a new wick for each hatch and avoid chances of an old wick burning too short to touch the oil.

After each hatch the egg trays should be washed in hot water and soda or a solution of one of the commercial coal tar disinfectants. Also hold the lamp burner in the hot soda water solution. It will remove the gummy material and make the wick easier to operate. Trim the lamp each morning before refilling. When the wick is first started it should be trimmed squarely across the top and then slightly rounded. After the first trimming with shears, it is only necessary to remove the burnt portions of the wick each morning by scraping with a match.

We find that the grade of kerosene is an important factor in maintaining an even temperature in an incubator. We buy the best grade obtainable and find it gives more heat for the money and less odor and soot. Before placing the eggs in the machine it pays to run it for a day and be sure that the thermostat is adjusted as advised by the maker. It should be adjusted so that too high flame on the lamp is not necessary to keep the heat in the machine up to 103 degrees. After the adjustment is made it need not be changed if everything is right but all other increases or decreases in temperature can be made by turning the wick.

The eggs should be turned morning and night from the morning of the third day to the night of the eighteenth day. Remove a few eggs from the center of the tray and roll the others toward the center. Then replace the eggs in the end. This keeps the eggs constantly changing in their place in the machine and all will receive a certain amount of turning.

It is not necessary to mark each egg to be sure that it is turned completely over each time. We have had better results when the eggs have been cooled a little whenever they are turned. This is nature's way and the old hens which cool their eggs obtain fine results. As the hatch progresses they need more cooling. Touch the egg to the eye and when that sensitive point tells that the egg is just barely cool, it is time to replace the trays in the egg chamber.

The first time we operated an incubator we made a chart and labeled it "What to do each day." After following the chart carefully thru the progress of one hatch the lesson was learned and directions not needed again. Test the eggs on the seventh and fourteenth. On the seventh day remove the clear eggs which are infertile and any that show a dead germ. On the fourteenth day remove any that were doubtful on the seventh or that have died since that time. The eggs that look very dark and seem a little warm with animal heat, will be the ones that contain rapidly growing chicks.

The best location for an incubator is in a cellar but it can be managed in a room that is not too close for a stove. Success in an upstairs room is more difficult but good results can be obtained. The temperature of the air in the room must be as uniform as possible as the air is constantly flowing thru the machine and thus the heat in the egg chamber is influenced by the temperature of the outside room. If an incubator is near a stove the machine may overheat when the stove is burning hard and then cool off rapidly when the fire goes down at night.

Vibrations on the floor and heavy jars in walking must be avoided if the incubator is not in a cellar. The slamming of doors may do serious injury to the eggs. All the family must help by being very careful when the incubator is operated in an upstairs room. The machine should be leveled with a spirit level before starting. The highest point will be the warmest so a level machine is necessary to have the temperature uniform at the level of the eggs.

Some breeders of poultry run their incubators as near as possible to 103 degrees thruout the hatch. Others use 102 degrees the first week, 102½ degrees the second, and 103 degrees the third. We have tried both ways with about equal results. In general it pays to keep the machine just as near to 103 degrees at all times as is possible. A few degrees low for a few hours will do no damage. But do not let the lamp creep up and overheat the eggs. A temperature four or five degrees too high causes a lot of trouble. Overheated eggs do not hatch well and the chicks that do emerge are apt to be thin and lacking in vitality. On the other hand the eggs can sometimes cool quite a bit over a period of several hours without destroying the germ. Of course changes are not desirable and the best results come when the temperature is right thruout the hatch. It is not possible to keep it right on the dot and operator should not constantly worry about the thermometer. Good machines are not hard to regulate and they are not apt to overheat if the lamp is given proper attention and the thermostat is properly adjusted.

We find one of the great advantages of early hatching is the fact that incubators are easier to operate

in cool weather than during the hot days of late spring or early summer. If the temperature becomes about 100 degrees outside it means constant watching and regulation of the machine to keep the eggs from overheating. Then a cellar is needed to produce good hatches.

When the hatch reaches the night of the eighteenth day we soak woolen cloths in boiling water, then wring them out and place them on the eggs. Then the trays and the cloths are returned to the egg chambers. The cloths will be found nearly dry the next morning and are removed. We believe that supplying this additional moisture has helped us to obtain larger hatches by reducing the number of chicks not strong enough to break the membrane and pick out of the shell.

When the cloths are removed, close the machine. Do not open it again for any purpose until the hatch is completed. When the chicks are dry and the hatch seems finished, open the machine and take out the chicks. Large day-old chick boxes are handy to hold the chicks while the machine is being emptied. We have found no value in removing the shell and membrane from chicks that have not had strength to come out for themselves. Such chicks are apt to be crippled or weak and of little value. It is rather tough to have to kill the cripples if there are any but it is only humane to do it at once and keep only the young birds that are thrifty.

Any chicks that have died in the shell should be at once burned or buried. The shells from the chicks that have hatched can be crumpled up and placed where the hens can eat them. Then the healthy chicks can be placed back in the machine and left until old enough to feed. We find good results come from feeding when the average of the flock are about fifty hours old. Some will be older and some younger but practically all the good chicks will be old enough to have the egg yolk absorbed. Then feeding will not cause bowel trouble and death if other conditions are right.

It pays to place a cloth or paper over a glass door incubator with thumb tacks if the chicks remain in the machine after the hatch is completed. They soon become very hungry and active and in the light they will constantly pick each other. When in the dark they will sprawl out and sleep and gain strength to eat and scratch when they reach the brooder house.

POULTRY WEEK AT THE PENNA. STATE COLLEGE

The week of March third to tenth is to be poultry week at the Pennsylvania State College. Intensive courses of instruction will be offered in all phases of poultry work. The exercises have been planned primarily to furnish the practice needed to round out the courses being given to the correspondence students, but other residents of the state will be admitted. The program has been arranged to include exercises in the care and use of incubators and brooders, in computing poultry rations, grading eggs, dressing fowls, culling for egg production, and in the diagnosis of poultry diseases. All applicants for admission to the courses should have some prior knowledge of the subject. Those who wish to enroll should send their name to Mr. T. I. Mairs, Director of Correspondence Courses in Agriculture and Home Economics, State College, Pa.



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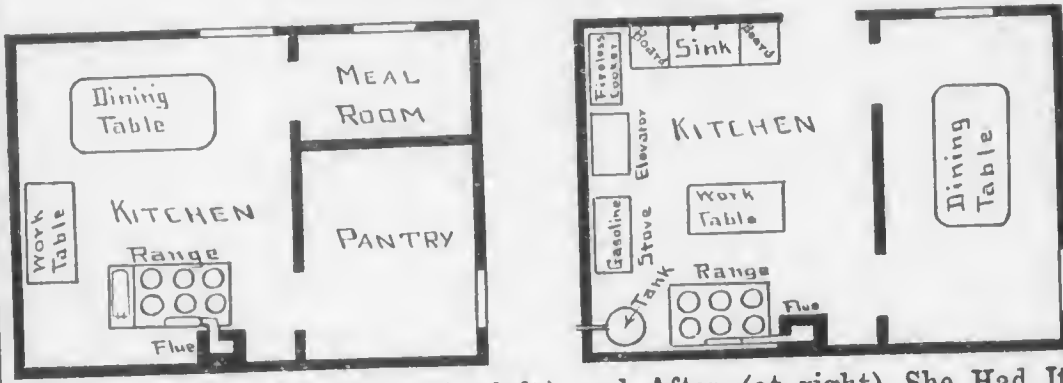
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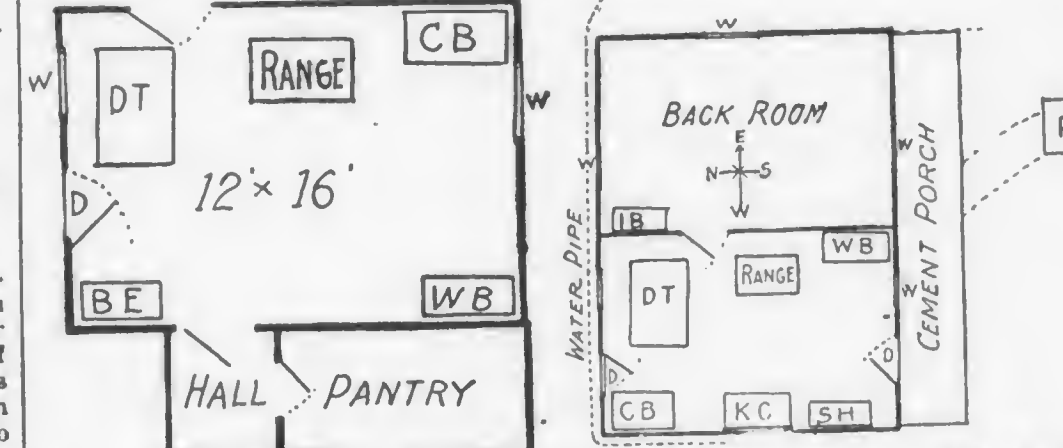
Of Interest to Farm Women and Girls

MAKING THE KITCHENS HANDIER



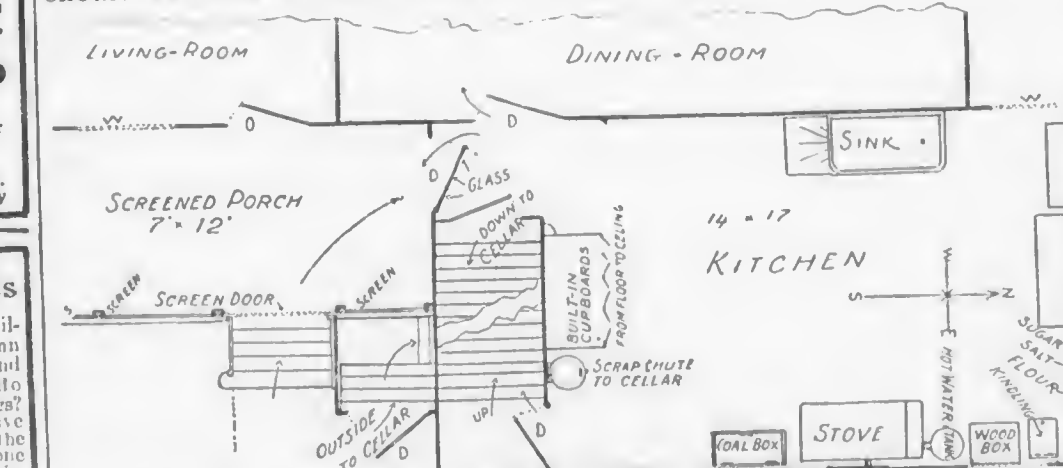
Kitchen of Mrs. Cass Before (at left) and After (at right) She Had It Rearranged

How Mrs. Cass Fixed Hers
Sometime ago we made the change in our kitchen illustrated herewith. By taking out the partition between the meal room and the pantry we got a very convenient dining-room, with a door into the kitchen at either end. But cutting a hole into the side of the chimney flue we were able to set the range back against the wall. This not only did away with the troublesome cubbyhole back of the stove, but also gave me more room in the center of the kitchen. Then we put in a water system, and have the hot water tank next to the firebox of the stove so that it can be heated without too long a pipe from the firebox to the tank. On the other side of the wall from the tank is the bathroom, hence the hot water does not have far to go to reach the bathtub.



Mrs. Reagan's Kitchen Before (at left) and After (at right) She Moved Things Around and Thus Saved Steps

I find that this arrangement of my kitchen permits me to do my kitchen work with much less fatigue than with the old arrangement, because I have less traveling. Notice where we have an elevator or dumb waiter. This water lets down level with the kitchen floor, so that when the work is done, I can push the work table over the elevator.
Notice that I have a fireless cooker at the right of the elevator. I think that a fireless cooker and an oil stove should be in every farm kitchen. It



The Mistress of This Big, Old-fashioned Kitchen Solved the Step-making Problem by Moving the Equipment All to One End of the Room, and She Had the Porch Screened

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Venice Center.

First a four-paned glass door was put in the south side. Two panels were cut from a north door, and window panes, 36 by 10 1/2 inches, were put in. We moved the cupboard (CB) over by the dining table (DT), and painted it inside and out a grayish white to match the color that I had painted the kitchen woodwork, which had before been an ugly cinnamon brown. I also put light-colored paper on the walls.

All everyday dishes and cooking utensils were kept in the cupboard instead of in the pantry, as my predecessor had done. The old woodbox (WB) was put in the backroom for chunks in winter, and we put a heavy hinge cover and castors on a good strong box, painted the sides to match the other paint of the kitchen, and tacked a padded cretonne cushion on top. We put this woodbox back of the stove where the cupboard had stood in the old arrangement. Thus I had a seat and a woodbox combined.

The water was piped into the kitchen from a pump (P) or a large galvanized tank (GT) outside. You can imagine the steps that those few feet of 1-inch pipe saved me. It took only a few hours of work one day of three men to put in this piping. The water was piped to a new sink, 20 by 30 inches (SH), which had a drain pipe, and drain shelf at one end. The water pipe went on out to the barn into a tank. The sink was placed on brackets back of the old glass door where the old woodbox had stood. A wood bench (BE) on which formerly a water pail and a wash basin had been kept, vanished.

After the pantry and hall were fixed into a dining room, we added a kitchen cabinet (KC) to my kitchen equipment. It has a nickeloid sliding top, a ventilated bread box, removable flour bin, which will hold 40 lbs., a 10-lb. sugar jar, and jars for tea, coffee, salt, spices and everything that one needs to get a meal, except the fruit, vegetables, milk and meat.

The work of fixing up this kitchen was all done without hiring extra help, and the cost was as follows: Pipe, 50 feet, 50 cents; faucet, 40 cents; sink, \$2.25; glass door, \$2.40; brackets for sink, 40 cents; woodbox hinges and castors, 38 cents; kitchen cabinet, \$25. Total, \$34.33. It would cost more now, but even so, it would be well worth it in the saving of my steps, time and strength.—Mrs. Frank Reagan, Cortland County, New York.

APPLE JELLY

Why do not more country people patronize the local jelly factory where apple jelly is made? We took about 13 bushels of surplus apples to the factory last fall and got 9 gallons of lovely jelly. When I want a jelly cake I have only to stir up a common plain cake (fairly rich), bake it in layers, spread them generously with jelly and sprinkle the top with sugar. We eat jelly on our pancakes every morning. It is fine with hot biscuits for supper, and indeed we find innumerable ways of using it. We paid 75c per gallon for making and the finished product sells for \$1.50. Better get some next year.—E. M. A.

Affording things is largely a matter of the way you look at it. The farm that can afford modern tools and equipment can afford running water in the house and a sewage system.

PENNSYLVANIA FARMER PATTERNS

Give figures and letters of each pattern exactly as printed at beginning of each description or we will not be responsible for correct fitting of orders. Give bust measure when ordering waist patterns, waist measure for skirt, and age for children's patterns. Address Pennsylvania Farmer, 261 S. Third Street, Philadelphia, Pa.

3472.—Chemise Style Dress.—This is good for slender figures. The pattern is cut in 3 sizes: 16, 18 and 20 years. A 16-year size will require 4 yards of 44-inch material. The width of the skirt at the foot is 2 yards. Serge with embroidery or braiding, velvet, satin, duvetyne, tricotine or twill could be used for this dress. The "apron" panel is a very smart feature. Pattern, 10 cents.



3492.—Unique Frock.—The pattern is cut in 6 sizes: 34, 36, 38, 40, 42 and 44 inches bust measure. A 38-inch size will require 5 1/2 yards of 40-inch material. The width of the skirt at its lower edge is 2 yards. Serge, duvetyne, broadcloth, tweed, plaid or check suiting are good materials for it. Braid or embroidery will form an attractive trimming, and a string belt or cord girdle may confine the fulness at the waistline. Pattern, 10 cents.

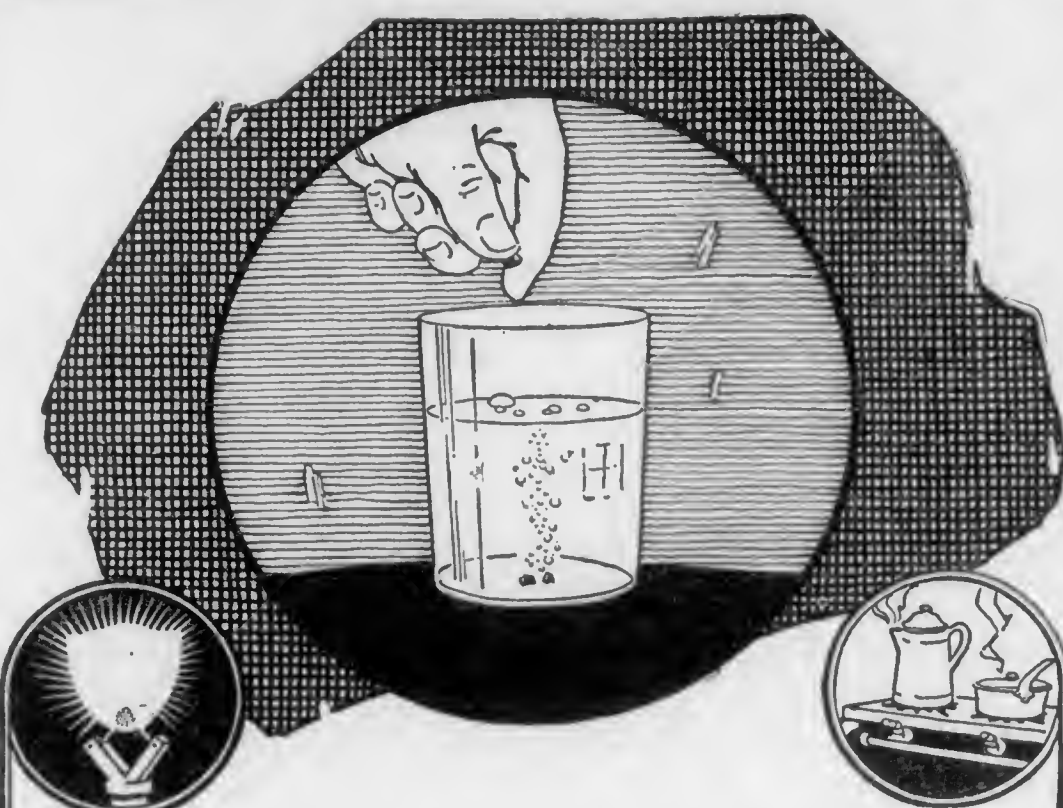


3369.—Unique and Stylish.—The pattern is cut in 7 sizes: 34, 36, 38, 40, 42, 44 and 46 inches bust measure. A 38-inch size will require 6 1/2 yards of 36-inch material. The width of the skirt at lower edge is about 1 1/2 yard. Braid and embroidery is here used for a decoration on serge. Pattern, 10 cents.

3388.—Dress for Growing Girl.—The pattern is cut in 3 sizes: 12, 14 and 16 years. A 14-year size requires 3 1/2 yards of 36-inch material. Blue serge with trimming of plaid woolen would be attractive for this dress. It is equally suitable for gingham, poplin, percale, taffeta, velvet and gabardine. Pattern, 10 cents.

In many a farm home the real family gathering place is the kitchen, especially in the winter. That's another reason why it should be bright and cheerful. Light colored paint helps a lot.

Those greens that you canned last spring taste mighty good now, don't they? How about a few more more cans next season?



Crushed stone and water —and a machine to mix them

THAT is Colt Carbide Lighting-and-Cooking reduced to its simplest terms. And what a wonderful combination! The Colt machine brings carbide (crushed stone) and water together, producing a marvelous gas.

This gas produces the hottest cooking-flame known; and a light that is seemingly a miniature of that great orb that rises in the east and sinks in the west.

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Picture your house, barns, outbuildings and driveways a blaze of radiant glory in the pitch black of the country night. And the little old Colt machine making gas as you need it, with the ease and dignity of the old-fashioned windmill!

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The Beechwood Duplex Grate gives a clear, hot fire without delay. The polished top and enameled sides are kept spotless and shining simply by wiping. Three colors, blue, brown and gray.
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SYNOPSIS

Dan Failing had just received from his physician the unwelcome information that he had but six months to live. Altho descended from a long line of hardy pioneers, his life had been spent in the city where confinement in an office had destroyed the physical foundation which his forebears had laid. He strolled out to the city park, seated himself on a bench where he made the acquaintance of a squirrel. The squirrel's antics awoke of Nature and he suddenly resolved to spend his last six months in the forests of the Northwest where his grandfather had lived. He set at once upon this resolve and he is soon in the virgin forests of that great country. He is fortunate in becoming an inmate of a home owned by a man who knew and loved Dan's grandfather. A daughter, nicknamed Snowbird, is also a member of the family.

CHAPTER VI

"FOUGHT! I would have fought till I died! But that isn't enough, Snowbird. It isn't enough just to fight, in a case like this. A man's got to win! I would have died if you hadn't come. And that's another debt that I have to pay—only that debt I owe to you."

She nodded slowly. The lives of the mountain men are not saved by their women without incurring obligation. She attempted no barren denials. She made no effort to pretend he had not incurred a tremendous debt when she had come with her pistol. It was an unavoidable fact. A life for a life is the code of the mountains.

"Two things I must do, before I can dare to die," he told her soberly. "One of them is to pay you; the other is to pay Cranston for the thing he said. Maybe the chance will never come for the first of the two; only I'll pray that it will. Maybe it would be kinder to pay to pray that it wouldn't; yet I pray that it will! Maybe I can pay that debt only by being always ready, always watching for a chance to save you from any danger, always trying to protect you. You didn't come in time to see the fight I made. Besides—I lost, and little else matters. And that debt to you can't be paid until sometime I fight again—for you—and win." He gasped from his weakness, but went on bravely. "I'll never be able to feel at peace, Snowbird, until I'm tested in the fire before your eyes! I want to show you the things Cranston said of me are not true—that my courage can stand the test."

"It wouldn't be the same, perhaps, with an eastern girl. Other things matter in the valleys. But I see how it is here; that there is only one standard for men and by that standard they rise or fall. Things in the mountains are down to the essentials."

He paused and struggled for strength to continue. "And I know what you said to him," he went on. "Half-unconscious as I was, I remember every word. Each word just seems to burn into me, Snowbird, and I'll make every one of them good. You said I am a better man than he, and sometime it would be proved—and it's the truth! Maybe in a month, maybe in a year. I'm not go-

The Voice of the Pack

by Edison Marshall

ing to die from this malady of mine now. Snowbird. I've got too much to live for—too many debts to pay. In the end, I'll prove your words to him."

His eyes grew earnest, and the hard fire went out of them. "It's almost as if you were a queen, a real queen of some great kingdom," he told her, trembling with a great awe that was stealing over him, as a mist steals over water. "And because I had kissed your fingers, for ever and ever I was your subject, living only to fight your fights—maybe with a dream in the end to kiss your fingers again. When you bent and kissed me on that hillside—for him to see—it was the same; that I was sworn to you, and nothing mattered in my life except the service and love I could give to you. And it's more than you ever dream, Snowbird. It's all yours, for your battles and your happiness."

The great pines were silent above them, shadowed and dark. Perhaps they were listening to an age-old story, those vows of service and self-gained worth by which the race has struggled upward from the darkness.

"But I kissed you—once before," she reminded him. The voice was just a whisper hardly louder than the stir of the leaves in the wind.

"But that kiss didn't count," he told her. "It wasn't at all the same. I loved you then, I think, but it did not mean what it did today."

"And what—" she leaned toward him, her eyes full on his, "does it mean now?"

"All that's worth while in life, all that matters when everything is said that can be said, and all is done that can be done. And it means, please God, when the debts are paid, that I may have such a kiss again."

"Until then, I make oath that I won't even ask it, or receive it if you should give it. It goes too deep, dearest—and it means too much."

This was their past. Not until the debts were paid and her word made good would those lips be his again. There was no need for further words. Both of them knew. The soldier of the queen must be tried with fire, before he may return to kiss her fingers. The light burns clear in this. No instances of degeneracy, no exceptions brought to pass by thwarted nature, can affect the truth of this.

In the skies, the gray clouds were gathering swiftly, as always in the mountains. The raindrops were falling one and one, over the forest. The summer was done, and fall had come in earnest.

CHAPTER VIII

The rains fell unceasingly for seven days; not a downpour but a constant drizzle that made the distant ridges smoke. The parched earth seemed to smack its lips and the little rivulets began to fall and tumble over the beds of the dry streams. The Rogne and the Umpqua flooded and the great steelhead began to ascend their smaller tributaries. Whisperfoot hunted with ease, for the wet shrubbery did not crack and give him away. The air was filled with the

call of the birds of passage.

All danger of forest fire was at once removed, and Snowbird was no longer needed as a lookout on old Bald Mountain. She went to her own home, her companion back to the valley; and now that his sister had taken his place as housekeeper, Bill had gone to the lower foothills with a great part of the live stock. Dan spent these rainy days in toil on the hillsides, building himself physically so that he might pay his debts.

It was no great pleasure, these rainy days. He would have greatly liked to have lingered in the square mountain house, listening to the quiet murmur of the rain on the roof and watching Snowbird at her household tasks. She could, as her father had said, make a biscuit. She could also roll up her sleeves over trim, brown arms and with entire good humor do a week's laundry for three hardworking men. He would have liked to sit with her, thru the long afternoons, as she knitted beside the fireplace—to watch the play of her graceful fingers and perhaps, now and then, to touch her hands when he held the skeins. But none of these things transpired. He drove himself from daylight till dark, developing his body for the tests that were sure to come.

The first few days nearly killed him. He over-exercised in the chill rain, and one anxious night he developed all the symptoms of pneumonia. Such a sickness would have been the one thing needed to make the doctor's prophecy come true. But with Snowbird's aid, and numerous hot drinks, he fought it off.

She had made him go to bed, and no human memory could be so dull as to forget the little, whispered message that she gave him with his last spoonful of medicine. She said she'd pray for him, and she meant it too—literal, entreating prayer that could not go unheard. She was a mountain girl, and her beliefs were those of her ancestors—simple and true and wholly without affectation. But he hadn't relaxed thereafter. He knew the time had come to make the test. Night after night he would go to bed half-sick from fatigue, but the mornings would find him fresh. And after two weeks, he knew he had passed the crisis and was on the direct road to complete recovery.

Sometimes he cut wood in the forest: first the felling of some tall pine, then the trimming and hewing into two-foot lengths. The blisters came on his hands, broke and bled, but finally hardened into callouses. He learned the most effective stroke to hurl a shower of chips from beneath the blade. His back and limbs hardened from the handling of heavy wood—and the cough was practically gone.

Sometimes he mended fences and did other manual labor about the ranch; but not all his exercise was taken out in work. He didn't forget his friends in the forest, creatures of talon and paw and wing. He spent long days roaming the ridges and fighting thru the buckbrush, and the forest yielded up its secrets, one by one. But he knew that no mortal span of years was long enough to absorb them all. Sometimes he shot ducks over the marshes; and there was no greater sport for him in the wilds than the first sight of a fine, black-pencill line upon the distant sky, the leap thru the air that it made until in an instant's flash, it evolved into a flock of mallard passing with the wind; and then the over the sights.

His frame filled out. His face became swarthy from constant exposure. He gained in weight. A month glided by, and he began to see the first movement of the largest forest creatures down to the foothills. For not even the animals, with the exception of the hardy wolf pack, can survive if unprotected from the winter snow and cold of the high levels. The first snow sifted from the gray sky and quickly melted on the wet pine needles. And then the migration of the deer began in earnest. Before another week was done, Whisperfoot had cause to marvel where they had all gone.

One cloudy afternoon in early November found Silas Lennox cutting wood on the ridge behind his house. It was still an open question with him whether he and his daughter would attempt to winter on the Divide. Dan of course wanted to remain, yet there were certain reasons, some very definite and others extremely vague, why the prospect of the winter in the snow fields did not appeal to the mountaineer. In the first place, all signs pointed to a hard season. Although the fall had come late, the snows were exceedingly early. The duck flight was completed two weeks before its usual time and the rodents had dug their burrows unusually deep. Besides, too many months of snow weigh heavily upon the spirits. The wolf packs sing endlessly on the ridges, and many unpleasant things may happen. On previous years, some of the cabins on the ridges below had human occupants; this winter the whole region, for nearly seventy miles across the mountains to the foothills, would be wholly deserted by human beings. Even the ranger station, twelve miles across a steep ridge, would soon be empty. Of course a few ranchers had homes a few miles beyond the river, but the wild cataracts did not freeze in the coldest of seasons, and there were no bridges. Besides, most of the more prosperous farmers wintered in the valleys. Only a few more days would the road be passable for his car; and no time must be lost in making his decision.

Once the snows came in reality, there was nothing to do but stay. Seventy miles across the uncharted ridges on snowshoes is an undertaking for which even a mountaineer has no fondness. It might be the wisest thing, after all, to load Snowbird and Dan into his car and drive down to the valleys. The fall roundup would soon be completed, Bill would return for a few days from the valleys with new equipment to replace the broken lighting system on the car, and they could avoid the bitter cold and snow that Lennox had known so long. Of course he would miss it somewhat. He had a strong man's love for the endless drifts, the crackling dawns and the hushed, winter forest wherein not even Woof or Whisperfoot dares to go abroad. He chopped at a great log and wondered what would suit him better—the comfort and safety of the valleys or the rugged glory of the ridges.

But at that instant, the question of whether or not he would winter on the Divide was decided for him. And an instant was all that was needed. For the period of one breath he forgot he was watchful—and a certain dread Spirit that abides much in the forest saw its chance. Perhaps he had lived too long in the mountains and grown careless of them; an attitude that is usually punishable with death. He had just felled a tree, and the trunk was still attached to the stump by a strip of bark to which a

little of the wood adhered. He struck a furious blow at it with his ax.

He hadn't considered that the tree lay on a steep slope. As the blade fell, the great trunk simply seemed to leap. Lennox leaped too, in a frenzied effort to save his life; but already, the leafy bows, like the tendrils of some great amphibian, had whipped around his legs. He fell, struggling; and then a curious darkness, streaked with flame, dropped down upon him.

An hour later he found himself lying on the still hillside, knowing only a great wonderment. At first his only impulse was to go back to sleep. He didn't understand the grayness that had come upon the mountain world, his own strange feeling of numbness, of endless soaring thru infinite spaces. But he was a mountain man, and that meant he was schooled, beyond all things, to keep his self-control. He made himself remember. It was the cruellest work he had ever done, and it seemed to him that his brain would shiver to pieces from the effort. Yes—he had been cutting wood on the hillside, and the shadows had been long. He had been wondering whether or not they should go down to the valleys.

He remembered now: the last blow and the rolling log. He tried to turn his head to look up to the hill.

He found himself wholly unable to do it. Something wracked him in his neck when he tried to move. But he did glance down. And yes, he could turn in this direction. And he saw the great tree trunk lying twenty feet below him, wedged in between the young pines.

He was surrounded by broken fragments of limbs, and it was evident that the tree had not struck him a full blow. The limbs had protested him to some extent. No man is of such mold as to be crushed under the solid weight of the trunk and live to remember it. He wondered if this were the frontier of death—the grayness that lingered over him. He seemed to be soaring.

He brought himself back to earth and tried again to remember. Of course, the twilight had fallen. It had been late afternoon when he had cut the tree. His hand stole along his body; and then, for the first time, a hideous sickness came upon him. His hand was warm and wet when he brought it up. The other hand he couldn't stretch at all.

The forest was silent around him, except a bird calling somewhere near the house—a full voice, rich and clear, and it seemed to him that it had a quality of distress. Then he recognized it. It was the voice of his own daughter, Snowbird, calling for him. He tried to answer her.

It was only a whisper, at first. Yet she was coming nearer; and her own voice sounded louder. "Here, Snowbird," he called again. She heard him then: he could tell by the startled tone of her reply. The next instant she was at his side, her tears dropping on his face.

With a tremendous effort of will, he recalled his speeding faculties. "I don't think I'm badly hurt," he told her very quietly. "A few ribs broken—and a leg. But we'll have to winter here on the Divide. Snowbird mine."

"What does it matter, if you live," she cried. She crawled along the pine needles beside him, and tore his shirt from his breast. He was rapidly sinking into unconsciousness. The thing she dreaded most—that his back might be broken—was evidently not true. There were, as he

said, broken ribs and evidently one severe fracture of the leg bone. Whether he had sustained internal injuries that would end his life before the morning, she had no way of knowing.

At that point, the problem of saving her father's life fell wholly into her hands. It was perfectly plain that he could not aid himself in the slightest way. It was evident, also, he could not be moved, except possibly for the distance to the house. She banished all impulse toward hysteria and at once began to consider all phases of the case.

His broken body could not be carried over the mountain road to physicians in the valleys. They must be transported to the ranch. It would take them a full day to make the trip, even if she could get word to them at once; and twenty-four hours without medical attention would probably cost her father his life. The nearest telephone was at the ranger station, twelve miles distant over a mountain trail. The telephone line to Bald Mountain, four miles off, had been disconnected when the rains had ended the peril of the forest fire.

It all depended upon her. Bill was driving cattle into the valleys, and he and his men had in use all the horses on the ranch with one exception. The remaining horse had been ridden by Dan to some distant marshes, and as Dan would shoot until sunset, that meant he would not return until ten o'clock. There was no road for a car to the ranger station, only a rough steep trail, and she remembered, with a sinking heart, that one of Bill's missions in the valley was to procure a new lighting system. By no conceivable possibility could she drive down that mountain road in darkness. But she was somewhat relieved by the thought that in all probability she could walk twelve miles across the mountains to the ranger station in much less time than she could drive, by automobile, seventy miles down to the ranches at the foothills about the valley.

He was stirring a little now. Evidently consciousness was returning to him. And then she thanked Heaven for the few simple lessons in first aid that her father had taught her in the days before his carelessness had come upon him. He had been wise enough to know that rare would be her fortune if sometime she did not have need of such knowledge.

One of his lessons had been that of carrying an unconscious human form—a method by which even a woman may carry, for a short distance, a heavy man. It was approximately the method used in carrying wounded in No Man's Land: the body thrown over the shoulders, one arm thru the fork of the legs to the wounded man's hand. Her father was not a particularly heavy man, and she was an exceptionally strong young woman. She knew at once that this problem was solved.

The hardest part was lifting him to her shoulders. Only by calling upon her last ounce of strength, and tugging upward with her arms, was she able to do it.

It was a distance of one hundred yards in all. No muscles but those trained by the outdoors, no lungs except those made strong by the mountain air, could have stood that test. She laid him on his own bed, on the lower floor, and set his broken ribs the best she could. She covered him up with thick, fleecy blankets, and set a bottle of whisky beside the bed. Then she wrote a note to Dan and fastened it upon one of the interior

doors.

She had learned, long ago, the value of frequent rests. She did not fly at once to her long tramp. For three minutes she lay perfectly limp on the fireplace divan, resting from the exertion of carrying her father down the hill. Then she drew on her hob-nailed boots—needed sorely for the steep climb—and pocketed her pistol. She thrust a handful of

jerked venison into the pocket of her coat and lighted the lantern. The forest night had fallen, soft and vibrant and tremulous, over the heads of the dark trees, when she started out.

Far away on a distant hillside, Whisperfoot the cougar howled and complained because he could find no deer.

(Continued Next Week).

A Story for Children

The Snowman



Billy and Kenneth Make a Snow Man

BILLY and Kenneth looked at their snowman with triumphant eyes. They had worked hard making him and could well be proud. Now they were trying to name him and it was Billy who first had an idea.

"He looks just like our janitor, Banco, with that broom under his arm and a pipe in his mouth. Let's call him that."

Banco became his name and for a while the newly made man had a fine time. The children played with him, pretending that he was their visitor from a cold, cold country. But soon Aunt Sally called them and as they smelled the spicy odor of ginger cookies, they quickly scampered off, leaving their snowman alone.

His smile turned into a scowl as he remarked:

"Isn't that just the way with those selfish children? I should think they would be more polite than to leave me here to entertain myself. What shall I do? I wonder when they will be back? My, this sun is hot!"

Just then the sun went under a cloud, and soon Banco began to shiver, for something cold seemed to be flying about him and touching him here and there. Some one slapped him in the face and then laughed merrily.

"Who is that?" Banco tried to turn his head but it was on so tight that he couldn't move it.

"It is I, North Wind. I've come to play with you." And again, he hit Banco so hard with his icy fingers that Banco almost tumbled over. "Well! I don't like you," snapped the snowman. "You're too rough and besides you've chased the sun away and I'm chilled thru. You're making me colder every minute. I wish you would call the children and then go away."

"Ho! ho!" laughed North Wind. "You're never satisfied. The children won't come out as long as I'm here for they are afraid of me, and I'm not ready to go yet. He blew water.—L. M. K.

"Oh, p-please g-go away North Wind!" chattered poor, frozen Banco, "and let the sun come back. Give me a chance to get warm."

"All right," consented North Wind

at last. But you'll be sorry you were

so rude to me and soon want me

back."

Once more the sun came out and

once more the snowman smiled. The

sun came closer and closer. Banco's

coat thawed out and little streams of

water ran down his sides.

"Mr. Sun, don't come so close.

You're scorching me," Banco called

weakly.

He got weaker and weaker and

smaller and smaller. A faint laugh

could be heard behind him.

"Is that you, North Wind? Please

come back now," begged Banco. "I'm

warm and will play with you now."

"Oh, no you won't!" sneered North

Wind. "You didn't want me, when

I was there and you needn't think

I'd come back now. I tried to help

you and you only thought I was

treating you badly. Oh, no, play with

the sun." And that was the last to

be heard from the wind.

Great tears rolled down Banco's

cheeks and no pleading of his could

make the sun go in. Soon he heard

Billy and Kenneth shouting and once

again he had hope. "Maybe they will

save me," he thought. But when

they saw him they laughed and

shouted.

"Look at Banco shrinking! Banco's

shriveling up like a little old man!"

Banco had just enough strength

left to murmur: "I don't want to stay

in such a cruel world anyway," and

then he knew nothing; for all that

remained of him was a little pool of

water.—L. M. K.

Avery-ize Now For Bigger Profits

The problem now is to raise bigger crops at lower cost. Increased production and decreased expense is now more important to you than ever before. Getting a tractor is the logical, practical answer to your problem.

Only a tractor can give you the economical power needed to work your land in the right way at the right time to get the best seed-bed—speedy power to take advantage of weather conditions, and hurry up your plowing, discing, harrowing and planting—fireless power that can do in hours' work that now takes days—hardened power that's ready in the early Spring when power is needed most—concentrated power that enables one man to do the work of several with horses—these mean lower costs, bigger crops and greater enjoyment in farm life.

seven sizes in the regular design using "Draft-Horse" Motors and "Direct-Drive" Transmissions—also two small Avery Tractors, the Model "B" 5-10 H. P. and the Model "C" Six-Cylinder. One and two-row Motor Cultivators, Motor Trucks, Power-Operated Tillage Tools, and Champion Grain-Saver Threshers and Silo Fillers.

Send For the Avery Catalog

Avery quality is now better than ever—there are many pleasing surprises for buyers of 1921 Avery machines, all shown in the new Avery Catalog. Write for a copy today. It is the most complete, up-to-date book ever published on motor farming machinery. Every farmer should have a copy. Sent free upon request.

Avery Company, 84 Iowa St., Peoria, Ill.

Branch Houses, Distributors and Service Stations covering every State in the Union



CROWN DRILLS

Big Reduction in Prices of Crown Grain Drills

Take advantage of the large price reduction on the CROWN Line of Grain Drills and Line Sowers.

We are giving the farmers every advantage in the cost of our line for the Spring Sowing.

New Needham Crown Drills are equipped with the improved Wizard fertilizer feed. This feed with the famous Crown Grain feed makes the New Drill the best in the market today.

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If in need of a Grain Drill, write us for catalog.

Your Blacksmith can equip your wagon with

self-oiling, wrought steel
NATIONAL TUBULAR AXLES

They are made sturdy for heavy duty and make life easier for your horses. Sold by Blacksmiths and dealers everywhere.

NATIONAL TUBULAR AXLE CO.
Emigsville, Pennsylvania

You Can Afford a Farm in Fertile Ontario or Quebec

The wave of high land prices may well turn your attention to the opportunities to be found in these two older Provinces of Canada. Here, close to immense cities—great industrial centers—with all the conveniences to be found in any land anywhere, are farms which may be bought at very reasonable prices. Owners are retiring, independent—in many cases rich. High prices for all farm products, good markets, all the conveniences of old, well-settled districts beckon you to investigate.

A Wonderland of Opportunity for the Pioneer.

If your means will not permit you to buy an established farm, Ontario and Quebec offer great fertile regions where the pioneer can hew out a home for himself and family—where prosperity and independence are to be won by those who will put forth the effort. Every branch of agriculture may be followed in these Provinces; dairying and stock raising are particularly successful.

For illustrated literature, maps, etc., write Department of Immigration, Ottawa, Canada, or

F. A. HARRISON
200 N. Second St., Harrisburg, Pa.
Canadian Government Agent.

Please Mention Pennsylvania Farmer When Writing to Advertisers

FARM PRODUCTS SHOW

(Continued from Page 5).

was found that a boy, Walter Miller, of Erie County, won with his white skins as he had in his own class.

Egg Show Was a Big Success

The third annual state egg show was held under the auspices of the Pennsylvania State Poultry Association in connection with the farm products show. The object of this was to encourage the production of more and better poultry and eggs and to show the producer the grades of eggs and their relative value. That it was a success is told by the fact that there were 220 dozen eggs entered by poultry keepers.

For the best dozen brown eggs in the show the five dollars went to Mrs. W. F. Hill, Huntington, and for the best dozen white eggs in the show, A. W. Brubaker, Lancaster, received five dollars for those from his single comb White Minorcas.

For the best exhibit containing five dozen brown eggs, J. C. Funk, White Haven, won first; Mrs. G. D. Marles, Neurville, second, and Chanticleer Poultry Farm, Ulster, third.

For the best dozen white eggs in the farmers' class A. W. Brubaker was first and Mrs. D. W. Line, Carlisle, was third. For the best dozen brown eggs Mrs. W. F. Hill was first; Lizzie Krubel, Celars, was second, and Mrs. T. A. Yost, Eiters, was third.

In the commercial class for the best dozen white eggs James M. Schropp, Hegins, won; Chanticleer Poultry Farm was second and Paul R. Guldin was third. For the best dozen brown eggs John R. Guldin, Yellow House, won; Chanticleer Poultry Farm was second, and G. E. Albright and Son, Mechanicsburg, was third.

In the boys and girls class for white eggs Pauline Trimmer, Mechanicsburg, won; Omar Ash, Benton, was second and Ned Schroppe, Hegins, was third. For best dozen brown eggs Ralph Woodburn, Claysville, won; Hawkins Scott, Fredricks-town, was second, and Ruth Trimmer was third.

A Machine For Every Need

In these days when there is a machine to do almost everything on the farm we expect to see all of them at a show of this character and the visitor to Harrisburg was not disappointed. Of tractors alone there were sixteen different makes and several styles of some makes. Then closely followed motor trucks, full lines of farm machinery, spraying outfits, milking machines, separators, barn equipment and so on down the list to bee and poultry keeping necessities. Most of the machinery was on the second floor of a large garage at Fourteenth and Howard Streets and with plenty of light it gave a faint idea of what proper housing would do for a display of this kind. Several of the dealers present said that business was not as good as it had been because farmers are feeling the marked fall in the selling price of their products but they are expecting things to be better as we get nearer the planting season. One noticeable readjustment on the part of manufacturers to meet the conditions facing farmers was the recent price reduction of one of the popular makes of tractors. A goodly number of possible purchasers seemed to admire it, too, over some of the others whose makers seem to think that the war is not over yet.

Work of Rural Vocational Schools

The rural county vocational schools under the direction of the State Department of Public Instruction, had an extensive exhibit of shop work, charts and photographs showing what is being done in the 52 counties where these schools are now established. This state has more boys than any other in the Union in the vocational schools, altho the start was only made in 1913 with five schools which soon dropped to three.

It would be hard to think of some useful thing for the farm which was not on exhibition as having been made by boys in the shop work. Wagon jacks, trap nests, double trees, milking stools, hog feeders, many useful bits of iron work and hundreds of other things testified to the practicability of the work in these schools. What the girls have done was shown by tables full of dresses, basket weaving, painted household novelties and sewing of all kinds.

Showing What the College Does

Pennsylvania State College made a very creditable showing in their large educational exhibit featuring a number of lines of work vital at this time to farmers. The value of spraying apples and potatoes was vividly shown by piles of fruit from sprayed and unsprayed trees and plants. From the figures over the piles a little mental arithmetic would show the loss or gain on an acre crop. The simplicity of mixing spray formulas was shown and full directions given as to when and how they should be applied.

The school of forestry from the college had several specimens showing the value of crosscutting soft woods and Prof. Anderson was kept busy most of the time answering questions about trees since wood has reached its high values. By means of photographs and charts it was shown how some trees are being sacrificed into \$25 worth of cord wood when they could just as easily be converted into \$80 worth of saw lumber or other products in between the two.

Women Were Well Represented

Women's interests were not forgotten when space was allotted and the section set aside for the Home Economics Extension Work of the State College attracted much attention. The department, under the direction of Miss Pearl MacDonald, illustrated, for one thing, many ways of taking short cuts in the home sewing. Numerous samples were on hand and many women and girls under the direction of instructors, who were there all week, carefully studied them and undoubtedly will be able to apply them to their advantage.

In order to give an idea of the character of work being done by the girls sewing clubs thruout the state, more than 200 finished pieces from dresses to wash cloths, were on display from the different counties.

The exhibit showing the value of milk in the diet was possibly the one which struck the most popular cord as both city and country people—consumers and producers—found many applicable facts in it.

The college women had also arranged a striking nutrition demonstration featuring the value of sleep, cleanliness and simple diet for growing children. Modern methods have made a game out of the task of building up undeveloped bodies and many parents stopped and wondered at the remarkable gains shown by the recorded cases.

Economy is often not so much "going without" as spending judiciously.

PASSING EVENTS IN PICTURES



- 1—Interested Spectators watching Ski-runners at an Endurance Contest, Switzerland.
- 2—Fishing for Sea Spiders in Nome, Alaska, means cutting a hole thru ice, perhaps five to six feet thick, letting down your fishing line, and waiting for results.
- 3—Baby Serene Richardson, and "Senaph" at the United Cat Show now being held at

- the Waldorf-Astoria Hotel, New York city.
- 4—Mrs. Hideo Kimura, 95 pounds, being easily lifted by strong man. 5—Man unable to lift Mrs. Kimura. She claims this is due to physical control, not mental.
- 6—Seven Russian Children, ranging in age from 3 to 12 years, who were adopted by Admiral McCully.
- 7—This Wall is the only one left standing

- in Patrick Street, Cork, Ireland, following the recent conflagration which left the city in ruins.
- 8—Mr. and Mrs. Berrang, are on their way to California. The two wagons are drawn by Oxen. Their speed limit is ten miles per day.
- 9—Here's a good Skating Outfit for Girls; it has knickers, and is very comfortable.

(Photo, Copyright by Underwood & Underwood.)



Renew your old silo and get a 3-Wall Craine at half the cost of a new silo

The Craine is the most economical as well as the strongest and handsomest silo you can buy—a 3-wall structure that gives triple strength and protection; that keeps silage succulent, unspoiled, protected from frost and harmonizes with the finest buildings. Inside is the wall of upright staves, closely fitted; then a wall of Silafelt to keep out water, air and frost; then the spiral Craineinox covering of enormous strength, which reinforces every square inch against pressure from within and without. No hoops, no lugs, no tinkering, no repairs.

By using the materials from your old stave silo you can have a Craine Triple-wall Silo at about half the cost of a new silo. Write us for full particulars; also for agency proposition.

CRAINE SILO CO., Box 140, Norwich, N. Y.

Will it Stand? YES

Every Part built to weather the storms. Tight-fitting heavy staves, creosoted; heavy steel hoops with rolled threads; doors like safe. Beautiful red cedar roof. CIRCULAR FREE.

CREAMERY PACKAGE CO.
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GREEN MOUNTAIN SILO

WITTE

\$49.45

2 H.P. PULLS 23

Direct from Factory to You

ALL SIZES AND STYLES

2, 3, 4, 6, 8, 12, 16, 22 and 30 H.P. at proportionately low prices. Above price for 2 H.P. is for engine complete on skids ready to use. From Pittsburgh add \$5. Quick shipment. Write or wire for Big New Engine Catalog FREE.

WITTE ENGINE WORKS
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CRUMB'S IMPROVED STANCHIONS

are guaranteed to please the purchaser. They are shipped subject to trial in the buyer's stable. They are right. Send for booklet.

WALLACE B. CRUMB,
Box P, Forestville, Conn.

A Milker That Milks

LACTANT

without stripping after, without injuring your cows.

Investigate this milker!

Buckwalter Supply Co.
Dept. P, Lancaster, Pa.

One oiling a year

provides ample lubrication for Model 12 STAR WINDMILLS

No-Oil-Em Bearings save many trips up the tower, insure positive lubrication, and prevent extravagant use of oil. Ask the Star Windmill dealer in your community to show you one of the No-Oil-Em Bearings.

Catalogue No. 95 sent on request.

FLINT & WALLING MFG. CO.
Department F, Kendallville, Indiana

HOOSIER
Lubrication Service

Provides an independent supply of water for farm homes. Easy to install—simple and economical to maintain. Write for Bulletin F.

FEEDING ROOTS

Roots, such as mangels, carrots or turnips are valuable winter feeds for dairy cows, feeder steers, young heifers, horses and sheep. They are especially valuable on the small farm where silage is not available. This fact has long been recognized by the farmers of Europe and some of our people have become converts to the fact.

An old man, who has long fed roots to his cattle, has given us his methods of feeding. He stores the roots in a cellar where the temperature stands at a point just above freezing all winter. He says it is unsafe to bring the roots directly from the cellar and give them to the animals, as they cause sickness when fed cold; so he brings the daily ration from the cellar to a heated room, where they are allowed to remain until the next day. Then the roots are cut fine and fed to the stock. This warms them to a degree which makes them safe to feed. He also says feed in the morning, especially in very cold weather. Roots are largely composed of water, so it is better for the animals to put them into the stomach in the morning. Roots are not calculated to furnish a large amount of body heat.

This man says feed roots to dairy cows just after the morning milking. Fed at that time, there is no danger of imparting a disagreeable taste or odor to the milk, even when turnips are fed. Other stock should be fed any time in the afternoon. He cuts the roots fine, believing it better to put in a little extra time than to take a chance of choking the creatures.

Carrots are fed to the horses. When the animals have little work to do, this cuts down materially on the grain bill. Mangels are best for milking cows while turnips are fed to other stock. The last named are very cheaply grown but are not of so much value as carrots and mangels.—C. H. Chesley.

over two hundred pure bred breeders, Holstein and Jerseys predominating.—D. K. S.

CONCERNING MILK PRODUCTS

Officials claim that the heavy and unlooked for decline in butter prices during the month of January has been largely due to the heavy and constant importations of foreign butter. During one week alone the importations amounted to the equivalent of 35,761 tubs of 62 pounds each. The domestic receipts during the same time were 34,796 packages.

A New York man well versed in the butter business, states that he fully expects that 20,000 to 25,000 cases and boxes will arrive here in February from Denmark, Holland, and Argentine. Denmark is making a reduction in her offerings for early shipments, thus making it cheaper than any of the stock that has arrived here.

In the face of the further decline in city milk prices on February 1st, it is doubtful if the leading brands of condensed milk can be maintained on a \$10.50 basis as it has been of late.

In evaporated milk, the only open market wholesale trading has been with European relief.

It is predicted by many that inside of twenty years, condensed milk will be a thing of the past and no longer of commercial importance as milk powder is much more economical to produce and the general public is beginning to appreciate its merit.

Several condensers in Pennsylvania and New York are already talking of changing over to milk powder.

The farmers at Lebanon, N. Y., have purchased the Borden plant at that place and Sunday, Jan. 30, commenced making cheese. The plant cost \$5000. Morrell Upham has been engaged as manager.—E. M. L. B. Susquehanna Co.

PREVENT SILAGE FREEZING

One of the most satisfactory things about feeding silage is that one does not have to dig out his cow and steer feed from a snow bank every time he needs feed during the winter. Still there are some things about feeding it that can be more convenient than they usually are.

Freezing of the silage in the silo is one of the annoyances. This can hardly be prevented by any silo that I have ever seen unless some additional precautions are used besides the silo wall itself.

I find that by keeping the edge dug down well—say 8 or 10 inches—and the center in a mound shape the freezing will be much less. Silage is warm even in winter but it cannot counteract the cold from the outside clear up to the silo wall. This allows less edge or surface to come in contact with the wall and helps to prevent freezing a good bit.

I have used a heavy blanket made of cottonseed meal sacks sewed together. This gives quite a protection all right and if one will use both the mound shaped top and the blanket the freezing can almost entirely be prevented with a wood silo.

After the silage is thrown down it can be protected by piling in one mound and throwing a blanket over it.—Earl Rogers.

Time was when the farmer's big job was to produce food. Now in pure self-defense he has to struggle with the marketing question, too.

PURE BRED CATTLE DEMONSTRATE VALUE

In the six cow test associations in active operation in Bradford County, Pa., there were 218 cows that produced 40 pounds or more of butterfat the past association month.

The high cow is a pure bred Holstein owned by C. W. Newman of the Wyalusing Association. She produced 90.4 pounds of butterfat and 2260 pounds milk. The second high cow is a pure bred Holstein owned by Fred Bohlayer of the Canton Association. She produced 90 pounds of butterfat and 2501 pounds milk. The third and fourth high cows are also pure bred Holsteins owned by H. C. Gates of the Canton Association. These cows produced respectively 80.5 pounds of butterfat and 2117 pounds of milk and 79.5 pounds of butterfat from 2208 lbs. of milk.

Of the above mentioned 218 cows, fifteen cows produced more than 60 pounds of butterfat, twelve of the fifteen were pure bred Holsteins, one was a pure bred Jersey and two were high grade Holsteins. Forty-four cows produced between 50-60 pounds of butterfat, twenty-two being registered animals and twenty-two being grades.

With this line of fact demonstrating the value of registered cattle, it is reasonable to believe that there will be a consistent gain in the number of farms in Bradford County that will in the future own pure bred cattle. At the present time we have

5 CENTS a day invested in a DE LAVAL may save you from 25 cents to \$1.00 a day



A DE LAVAL Cream Separator is the best paying investment any cow owner can possibly make.

It saves twice a day, 730 times a year, over any other system or inferior separator—in quantity and quality of product, time and labor.

Its cost represents an investment of about 5 cents a day for ten years, including cost of operation and interest on the investment. With simple care it will give good service not only for 10 but for 20 to 30 years; it practically never wears out.

Such an investment may save you from 25 cents to \$1.00 or more a day, according to the number of cows, returning from 500% to 2000% profit on the investment. Every day you delay the purchase of a De Laval you waste and lose money.

Today a De Laval Cream Separator, considering its improvements and quality of construction, is one of the cheapest things you can buy. With cheaper feeds and butter-fat at present prices there is more profit today in butter-fat than there was a year ago. Relatively, a De Laval is cheaper than it was a year ago.

See your nearest De Laval agent now about getting a new De Laval. Even though you have only one good cow, it will pay you to own one.

The De Laval Separator Company

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165 Broadway 29 E. Madison St. 61 Beale St.

Sooner or later you will use a De Laval Cream Separator or Milker

If You Have Ever
Used
**Mechling's
Scale Oil**
you will realize its
superiority

A high-grade miscible oil
has to be made by skilled
and experienced chemists.

When using Scale Oil you
will find that it

**Mixes More Easily
Stays in Emulsion Better
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**Scale Oil Cleans
up the Trees**

We make a full line of Spraying
chemicals—Lime Sulphur,
Hydroxide, Lead Arsenate,
Calcium Arsenate, Dusting
Mixtures, Sulphur (all kinds.)

Mechling Bros. Mfg. Co.
If your dealer does not carry our line
write us direct.

Insecticide Dept., Camden, N. J.
Phila., Pa. Boston, Mass.

5 Great Novelties 20cts.

AUTUMN GLODY. A new
hardy plant. The most
showy autumn flower.
It is the latest to bloom,
showing its full glory
after frost has killed all
tender flowers. Greatest
novelty in twenty years.
Succulent, evergreen,
reaching perfection the
first season from seed,
and continues blooming
for years. 25 cts. per plant.
Without order we send
one packet each of
PINK WOOLFLOWERS.
new—nothing can sur-
pass the mass of pink flowers
which it shows all season.
Blooms in 3 to 4 months.
JAPAN IRIS. New hybrid of all colors. Mamechit.
Plants and new berries. We grow the finest Gladioli,
Dahlias, Cannas, Irises, Peonies, Tuberous, Shrub,
Violets, etc. All prices extreme—many sterling novelties.
JOHN LEWIS CHILDS, Inc. Floral Park, N.Y.

Reading Bone Fertilizer

Quality Service Satisfaction

Service—We have helped with honest
advice hundreds of farmers in the
East. We might be able to help you.
Write us—no obligations whatever.

(This trade mark means quality)

Reading Bone Fertilizer Co., Reading, Pa.

**GROW RICH
BY PLANTING OUR
BEST ON EARTH
TOMATOES**

ALL MONEY MAKING SORTS
—63 VARIETIES—
CATALOGUE FREE, GET IT TO DAY

THE MOORE SEED CO.
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KELLY'S Perfect Trees

Guaranteed

You can rely on our 10 years reputation for square deal-
ing. Kelly's trees (all varieties) are sturdy and well-rooted
perfect specimens and guaranteed to satisfy. You take
no risk! The prices are reasonable. Send for 1921 Free
Catalogue.

KELLY BROS. WHOLESALE NURSERIES
1110 Main Street Danville, N. Y.

ORCHARDING IN PENNSYLVANIA

(Continued from Page 11).

men in this business—it calls for
philosophers with a stability of pur-
pose.

"I hope this crisis in the apple
industry will teach our wholesale
growers a lesson in the danger of
over-specialization. Western New
York has learned to combine apples
with other fruits and farm crops in
such a way as to most fully utilize
man and team labor thruout the year.
They have been able to withstand
several periods of depression in the
past 50 years, and they do not have
a red ink entry on their ledgers even
this year. Southern Pennsylvania is
destined to rival New York for pre-
supremacy in wholesale apple growing
within fifteen years and must take
this lesson to heart. Single crop
farming is disastrous in the long
run.

"The difficulties of the present situ-
ation are given us to overcome, not
to overcome us. In spite of them the
outlook is bright, but only for the
right kind of men. Speculators will
be caught, highly inflated stock com-
pany orchards will be deflated, but
the real grower whose heart is in
his work can look to the future with
confidence. He will receive a fair re-
turn for his labor."

RECLAIMING ORCHARDS IN CAR-
BON COUNTY

Carbon County enjoys the advan-
tages of nearby markets probably a
great deal more than any other coun-
ty in the state. In the south she
has her industrial towns; in the cen-
ter and northern section she has her
mining towns. These towns, al-
though not very large are quite nu-
merous and furnish very good mar-
keting places for the farm products
of the county. Many of the farm
products can be sold direct to the
consumer by the farmer himself and
thus he is able to get slightly bet-
ter returns than what he would be
able to get if he sold to a retailer.

The condition of the fruit trees in
this county is just the opposite of
what should be expected after taking
the marketing conditions into consid-
eration. The home orchards number
anywhere from 25 to 300 trees, and
most of them are on the decline.

These trees were planted anywhere
from 25 to 60 or 75 years ago and
since that time have received no at-
tention. Many of these orchards have
been kept in soil continuously and
instead of receiving fertilizer of any
kind have been robbed of their fer-
tility by having one or two crops of
hay taken off each season. As a re-
sult the trees have made very little
growth, if any, for the last few
years. The fruit which they bore
was usually undersized and of poor
quality.

From the standpoint of the mar-
ket conditions within the county and
from the possibilities that are hidden
in an old neglected orchard the Coun-
ty Agent encouraged a number of
farmers to take up some fruit im-
provement work.

Pruning demonstrations were con-
ducted in a number of old orchards
last spring and the farmers were
shown how to bring an old unru-
ly tree "back to earth" by cutting back
a certain amount of the tops. These
meetings were very well attended.
The farmers not only looked on but
actually did some of the pruning
work. They believed in the old max-
im "You learn to do by doing."

This, however, was only the be-
ginning of the fruit improvement

program. The real test came when
the men were obliged to invest in
high-priced spray machinery in or-
der that they might have clean fruit.
Twelve farmers invested in combina-
tion potato and fruit sprayers and
a number more invested in straight
fruit sprayers. These men formed the
nucleus around which the fruit im-
provement work of the county was
to grow.

Spraying information was drawn
up and given to each farmer who was
going to spray his trees. The infor-
mation dealt with (1) materials to
use; (2) time of application; (3)
insects and diseases to be combated.
The extension pathologist or the ex-
tension entomologist accompanied the
County Agent at various times so
that they might know the various in-
sects and diseases that were present
and thus help in the prevention or
the elimination of the same. The
farmers were especially urged to
keep the spraying pressure up to 250
or even 300 pounds, and also to
spray the trees very thoroughly so
that not a limb should be missed.

The results obtained by this care
are shown by the following figures:
In 1919 the unsprayed orchard of
Mr. Q. E. Hahn produced 125 bushels.
In 1920 the same orchard carefully
pruned and sprayed yielded 2250 bu.
of apples of which over ninety per
cent was first-class fruit. Similar re-
sults were reported from the orchard
of Mr. Q. O. Buck which produced 150
bushels of fruit in 1919 and 2000 bu.
in 1920 when sprayed and given the
proper care. Of Mr. Buck's 1920 crop
over eighty-seven per cent was per-
fect fruit.

Results similar to these were ob-
tained thruout the county and the
men who sprayed have been able to
sell their crops to good advantage,
while the sooty, scabby and warty
fruit from neighboring unsprayed or-
chards has been hard to sell at any
price. The good results obtained by
this one season of good orchard man-
agement make it certain that this is
but the beginning of orchard reju-
venation in general in Carbon Coun-
ty.—Nicholas M. Rahn, County
Agent.

WHAT TO DO FOR ONION
DISEASES

The onion is susceptible to the
onion smut fungus only while in the
young seedling stage. After the
plants reach a height of 3 to 4 inches
they become immune to further in-
fection. Smut spreads slowly in the
soil, but an infested area in a field
will gradually become larger and
more severely diseased each year on-
ions are grown on such an area. The
spores are spread on farm imple-
ments, the feet of men and animals,
by surface water, and in dust car-
ried by the air. Purchasers of on-
ions sets should use caution that they
do not contaminate the soil by plant-
ing smutted sets.

Control is accomplished in home
gardens by changing the location of
the onion bed to clean soil, or by
planting sets instead of seed. In
large commercial onion districts of
northern states formaldehyde solu-
tion is applied in the furrow with the
seed, as this disinfectant holds the
fungus in check. One fluid ounce of
37 to 40 per cent formaldehyde solu-
tion is used with each gallon of wa-
ter, this diluted solution being ap-
plied at the rate of 200 gallons per
acre or 1 gallon to about 185 feet of
row. Farmers Bulletin 1060, recent-
ly issued by the United States De-
partment of Agriculture, describes in
detail the apparatus used in apply-

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trees, shrubs, insecticide and fungicide. High
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tion and complete line of spray materials.

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In small or large lots at half
prices. Catalogue and
Green's Fruit Book Free. Green's
Nursery Co., Box 33 Wall St.,
Rochester, N. Y.

ing this fungus-destructive seed pro-
tector. As a rule, it costs about \$5
an acre to insure the onion crop
against smut losses in this manner.
It is advised that the tops of diseased
onions be burned after harvest in or-
der to prevent the return of infected
onion refuse to the soil. The spread-
ing of waste from onion warehouses
is a bad practice.

A Destructive Plant Disease

Onion mildew or blight is some-
times serious in the cooler and more
humid onion districts. The disease
commonly starts in the field in spots
and spreads to the surrounding areas,
its development being greatly aided
by moist weather. It centralizes its
attack on the leaves which turn yel-
low, become covered with furry
growth, and eventually collapse. The
disease occurs wherever onions are
grown extensively, altho the control
varies in different sections. A fungus
causes the disease, the furry masses
on the affected leaves being branches
of the fungus, which bear abundant
spores. Warm weather promotes
spore germination and hence is fa-
vorable to the spread of the disease.

As the spores winter in the onion
field, an efficient crop rotation is one
commendable method of control, the
supplementary growing of cabbages,
potatoes, and sugar beets with onions
being valuable. Good soil drainage
also helps to reduce the blight, since
it decreases the moisture in the air
near the surface of the soil. Good
air drainage of the field is also es-
sential so that excessive dew and fog
may be avoided. Rosin fish-oil soap
as a sticker, makes the use of Bor-
deaux mixture effective in controlling
onion mildew. The Bordeaux mix-
ture consists of 4 pounds of copper
sulphate, 4 pounds of quicklime, 3
pounds of rosin fish-oil soap, mixed
with water to make a 50-gallon solu-
tion.

Root Knot

Root-knot of onion is an eelworm
disease which dwarfs the above-
ground parts of the plants and re-
duces the size of the bulbs. The eel-
worm, a minute nematode, lives in
the soil and causes galls on the onion
roots. Live steam applied under con-
siderable pressure will free the in-
fested soil of eelworms. In large
areas where steaming is not prac-
ticable, nematodes can be reduced by
a proper system of crop rotation, as
the avoidance of susceptible crops
starves out the eelworms. However,
to avoid root-knot it is never advis-
able to plant onions on land known
to be eelworm-infested.

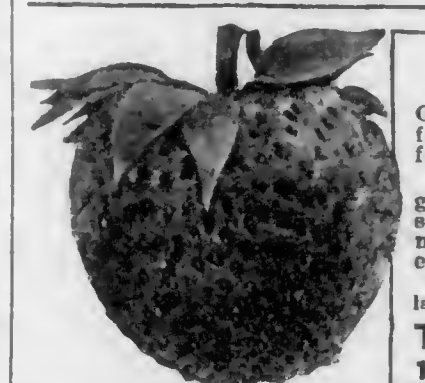
Neck Rot

Neck rot, another onion complaint,
may be avoided by providing proper
irrigation and protecting the crop
from damp weather after harvest. Ar-
tificial curing by passing a current
of heated air over the onions in shal-
low crates until the necks are thor-
oughly dry also reduces losses.

Soft Rot

Soft rot is caused by a group of
bacteria which also damage cabbage,
carrots, celery and many other vege-
tables. Crop rotation and sanitation
should be employed to suppress it,
and precautionary measures in har-
vesting, curing and storing the crop
should be followed religiously. All
affected bulbs should be sorted out
before storage or shipment.

General sanitary measures and pro-
tection from moisture after harvest
are efficient in controlling onion
black mold. The bulbs should be
thoroughly dry before they are shipped.



Grow Strawberries

Nothing equals strawberries as a cash crop on the small place.
One customer reports \$1542 from less than 1/2 acre. Every
farm and town garden should have a patch of strawberries
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This Berry Book also describes and prices the leading early, medium and
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ommendations.

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engine trouble
is due to inferior oil

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season," a farmer said the
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dollars." Your own situation
may never be so acute—yet a
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The break has come. For sometime prices paid for farm products have been low. It is but natural to want lower prices on the farm implements used in producing crops.

Announcement is made by the Oliver Chilled Plow Works of a general price reduction in their lines that brings prices to the basis of 1918. They are among the first to make this reduction and are taking the loss that there has been little reduction in labor or ma-

terial—as their contribution in hastening a return to normal conditions.

This is your opportunity to secure new, up-to-date Oliver quality implements that will help you produce a full crop, and get them at a price in line with the reduced prices on your farm products.

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Philadelphia Farmers

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COUNTY NOTES

Mifflin Co., Pa.—Had very fine winter weather since our last report; some cold mornings but mostly warm thru the day; not much snow till last night it sleeted about four inches with a little rain. A few sleds out. Farmers still hauling and sawing their year's wood supply. Farmers in the Kishocoquillis valley got some plowing done. Not many cattle fed, so farmers are keeping more cows and shipping the milk for which they received \$2.95 per 100 pounds in December. Dressed beef selling at 16¢ 17c lb.; dressed pork, 15c; lard, 18¢ 20c; butter, 65c; eggs, 60c; apples, 75c bu.; potatoes, \$1.50; grain same as last month. wheat, \$1.50; corn, \$1.25; oats, 60c. Not much market for cows and horses, except very good ones; general work feeding and tending stock. Quite a number of idle men on account of public works shutting down, and the railroads reducing their forces. The mild winter is favoring the poor people.—J. H. Byler.

Forest Co., Pa.—Crops in general were fairly good the past season. Apples were abundant about forty per cent of the crop was not harvested. Very nice fall weather prevailed, giving farmer a splendid opportunity to do up the fall work, threshing, corn husking and potato digging were all done in good time, but not quite the usual amount of fall plowing was done. The ground has been frozen all thru January, but not much snow. The roads have been in fair condition, though a little rough at times. Some farmers are feeling a little blue on account of prices of farm products being so low, no demand for fat cattle; dressed beef is about 14c; hides, 3c, and grain below a living price; butter, 65c; eggs, 60c, but we don't hear any one talking of quitting.

Some purebred cattle and hogs have been brought into our county, and on January 14th, a very interesting meeting was held in connection with the Farm Bureau at Tionesta, Pa. Ten men who are interested in the development of the purebred hog industry in Forest County were present. Dr. Hayner gave an idea of prices and agreed to furnish information and give assistance concerning places where good breeding stock could be obtained reasonably.—C. E. M.

Union Co., Pa.—The corn show at Harrisburg last week was well attended by farmers from this county, and several prizes were awarded for corn from the county. Some corn has been marketed lately shelled, at 70c bu., and several carloads of wheat to a local miller near the railroad were marketed at \$1.80, though \$2 would start wheat to market in a hurry. Sixty some farm sales are advertised for March in this county and a number will be held in February. Lower prices, high price of labor, farms changing owners and others retiring are the reasons for so many changes.—J. N. Glover.

Blair Co., Pa.—We are having real spring weather. We are afraid it will injure the fruit. We have had very little snow here so far. The shops around here are all laying off men. Farm labor is plentiful now when it is not needed so badly. The markets are as follows: Potatoes, \$1.50 bu.; apples, \$1.25 bu.; eggs, 75c doz.; grain remains about the same as last month. The ice harvest is almost a complete failure so far.—H. M. McVey.

Frederick Co., Md.—Old citizens say this has been the mildest winter on record. The ice crop has been unusually short and indications are that but few of the ice houses will be filled.

The wheat is small and has been injured by frost, there being no snow to protect it. The early part of January was exceptionally mild and many farmers were able to plow their corn ground.

Hogs for market are scarce as nearly all feeders sold early fearing a drop in price. The farmers of this section are almost without exception opposed to a return of the daylight saving law.

FEDERATION OF FARM BUREAUS IN NEW JERSEY

The Morris County Board of Agriculture is now the county unit of a great national farmers' organization. Farm men and women of the county know that the business of the County Board, in the past, has been the development of the agriculture of the county, thru the work of the County Agent, Home Demonstration Agent, and the Boys' and Girls' Club Agent. The program for 1921 shows that the county will continue to co-operate and to develop the work along these lines. This year, however, by joining the County Board of Agriculture, one automatically becomes a member of the State Council of County Boards and the American Farm Bureau Federation. Aside from the benefits which members will derive from their local county organization, then, and the state body, they are supporting a great national movement.

The New Jersey Council of County Boards of Agriculture was organized in January, 1920. It is the farmers' state organization for all statewide problems and it stands for the following things:

- 1—A more profitable farm business thru—
 - (a) Successful competition with the city for labor and capital.
 - (b) A fair price for farm products.
 - (c) Better distribution of farm products.
 - (d) More efficient marketing.
 - (e) Improved transportation service.
 - (f) Just transportation rates.
- 2—State and Federal laws for the advancement of agriculture.
 - (a) To deal justly in case of all measures and policies affecting the interests of the producer, as well as the consumer of farm products.
 - (b) That provide a better rural education.
- 3—A public better informed of agricultural facts.
 - (a) A better informed farmer, resulting from co-operation with all state agencies promoting agriculture.
 - (b) A better informed consumer, resulting from the publishing of facts concerning conditions needed for producing a safe food supply that will afford the farmer a comfortable living and guarantee the consumer his food at a reasonable price.

These things can be accomplished only by the full co-operation of every farmer in the county and state, who will decide the program of work which will accomplish these things and stand back of this program in a united body.

During the past year, the State Council has obtained much needed amendments to the game laws.

The Best Rule

For Every Farmer who believes it pays to sow the very Best Seed, is to—

"Sow Hoffman's Grass Seeds"

1 CLEAN Free from weeds — "The best of the crop"

2 PURE Very high tests — average about 99%+

3 SOUND Every bush tested for highest germination

4 HARDY Survive Northern Winters

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Seed Potatoes

Choice, extra fancy Europeas. Absolutely blight and 100% yield. Mature in 60 days. Numerous yields. Average yields of 300 bushels per acre are common. Large round tubers, white skin, flesh white and moist. Most delicious flavor.

Choice, graded No. 1 seed, \$2 per bushel; \$5 per bushel; \$10 per bushel. O. H. Jones, Inc. Order by mail, when you want them, \$1 per bushel, will book your order for delivery any date.

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We save you money. Highest crop of excellent quality. Buy now while crop is moving. Price sure to be higher later. Don't buy bad seeds of any kind until you see our samples and prices. Alfalfa, Alsike and Sweet Clover, shipped subject to your approval and test. Write today for Free Samples, Prices, Big Seed Guide. American Mutual Seed Co., Dept. 100 Chicago, Ill.

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Free Catalog In colors explains money on Farm Truck or Road Wagon, also steel or wood wheels to fit any running gear. Send for it today.

Electric Wheel Co., 68 Elm St., Quincy, Ill.

LIMITED SUPPLY FOR SEED of very fine large White-Evergreen Sweet Corn, hand shelled, at 20 cents per lb.; 4 lbs. \$1.00 postpaid; 10 lbs. or more 25¢ per lb. (order while it lasts. Money refunded if not entirely satisfactory. Reference: Farmers National Bank, Canton, Pa. B. K. ZEHNER, NEW RINGGOLD, PA.

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A are the largest handlers of commission hay to greater New York; if you have hay to dispose of communicate with them.

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261 South Third Street, Philadelphia, Pa.

TREAT EVERYBODY ALIKE—CHANGE GAME LAWS

A great deal of time and energy is expended at each session of the Legislature on laws to govern the taking of fish and game during the following two years. Few questions elicit as much interest at Harrisburg as does this.

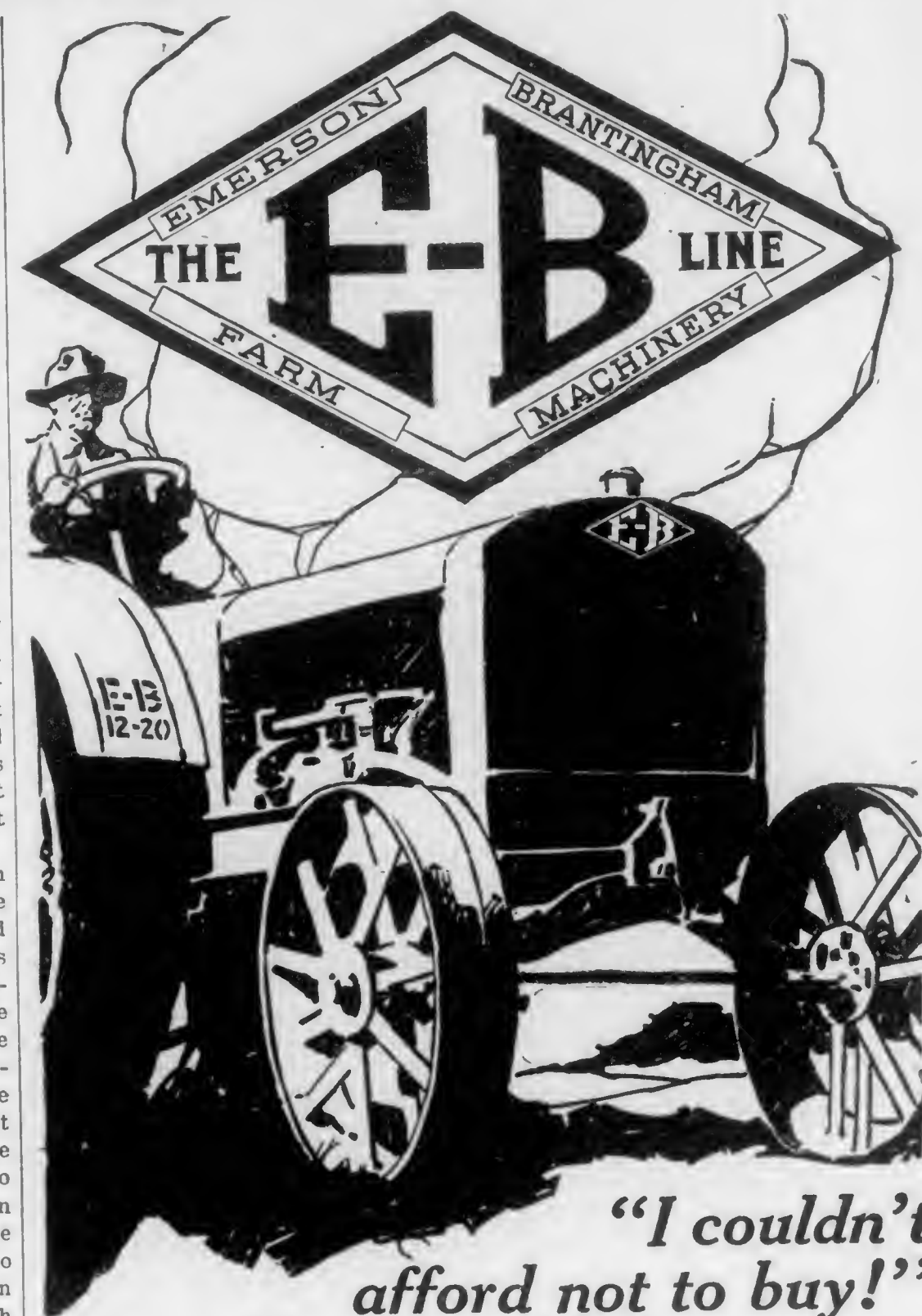
This is a natural habitat for fish and game. With our large area of wooded mountain land (whereon are many fine fish streams), with our numerous state forest reservations—and others likely to be secured soon—we have ideal conditions for producing fish and game. And within legal limits fishing and hunting can, and should be, carried on in season without damage to private property. The time is here when the rights of property owners should be respected. Many hunters seem to feel that wearing a license certificate on the coat sleeve gives the right to tramp all over private property, to leave gates open, bars down, to break or cut down fences, to steal fruit, shoot poultry, etc., etc.

The posting of property has, in many sections, become a joke. The signs are ignored, the owner jeered at, even threatened, if he undertakes to remonstrate. When the Legislature passed the law requiring the property owner to post his land if he desired to exercise any control whatever over his property, it put the shoe on the wrong foot. Let it now put the shoe on the other foot and make it a misdemeanor for any one to go upon private, seated land with gun or fishing tackle unless carrying the written permission of the owner to do so. Put the burden of proof on the hunter or fisherman to establish his right to be there. Some gentlemanly hunters and fishermen get this permission now. The other kind should be made to get it—or to stay off private land. This latter kind can find public property on which to fish and hunt in the state reservations. Private parties should no longer be expected to provide for such as he. The law should be made to protect property for the man who owns it and pays the taxes upon it. And this protection should be for twelve months in every year and not for only nine or ten as at present.

When one goes from the country into town, one is expected to not violate any private property there. Should one run over lawns, pluck flowers, knock piling off of fences, etc., the arm of the law would soon get into action. I know of no "open season" there, no weeks or months when the pleasure or whim of the trespasser supersedes the vested rights of ownership. The real estate owner there is protected twelve months in every year—and properly so. If there ever was any justification for making the farmer the goat of every Tom, Dick or Harry, our state forest reservations have taken it away.

If the hunting and the fishing public is given to understand that hunting and fishing privileges are accorded freely on these numerous reservations during the open season, and that trespassing on private property without the owner's written permission is a misdemeanor, the sportsman should be satisfied, and I am sure farmers will be.—W. T. Hill, Past Master State Grange.

If an income is to be of most use a record must be kept of the way in which it is spent; with that knowledge one can tell whether it has been distributed wisely.



"I couldn't afford not to buy!"

Two farmers were talking over the outlook for this year. "I've just bought a new E-B plow," said one, "and I'm figuring on a new cultivator. Expect to place my order this week."

"What's the hurry?" asked the other. "Do you think this is a good time to buy?"

"Well, I thought at first I couldn't afford them, right now," said the first, "but when I began to think about profits this year I decided I couldn't afford NOT to buy. As I see it, there's only one way to be sure of a successful year—to plow and plant as many acres as I can take care of, and make every day count for bigger crops at less expense. That means better implements—tools I can depend on to save me time and do the work thoroughly. The old machines may have pulled me through last year, but they won't stand another season's use."

Can you afford to put off buying this year? It's worth thinking about seriously. Let your E-B dealer show you the time and labor-saving features in E-B tools. You'll see how they can help you farm more profitably.

Emerson - Brantingham Implement Co., Inc.

Established 1852 Rockford, Illinois
Pennsylvania Branch: Harrisburg, Pa.
A Complete Line of Farm Machinery Manufactured and Guaranteed by One Company

STABLE MANURE
to cartload, delivered at all railroad stations
PULVERIZED SHEEP MANURE
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IN
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WRITE FOR FULL PARTICULARS
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Please Mention Pennsylvania Farmer When Writing to Advertisers



Cut the Costs—Swell the Profits

The stock-grower who keeps his cost of production low enough is safe on any market. Selling on a high market he gets big profits—on a low market he gets some profits instead of facing a loss.

And whether you produce dairy products, beef, pork, mutton or wool you can surely reduce costs by regularly adding to the ration the tested, dependable stock tonic—

Pratts Animal Regulator

It helps build and preserve stock health—that means work animals in the harness every day, steady milk production from every cow, rapid growth of young stock. It aids digestion—that means a saving of food, all used, none wasted. It strengthens and tones up the whole system—that means strength, vigor and vitality without which any animal is of little value.

Cut costs, too, by checking contagious diseases which may kill some of your stock and seriously injure the rest. Use, regularly and freely,

Pratts Dip and Disinfectant

to kill disease germs and parasites. As a dip to exterminate lice and ticks and overcome skin troubles. As a disinfectant to maintain stables and pens in sanitary condition. Low in cost—safe—powerful—efficient.

Make this your motto—"Every animal on the job every day." Then make good by using Pratt's Stock Preparations. You must be pleased—

"Your Money Back If YOU Are Not Satisfied"

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LIVE STOCK

CARE OF THE BREEDING EWES

By W. H. Tomhave

The condition of the lamb crop will depend in a large measure upon the kind of treatment given the breeding ewes during the next few weeks. If the ewes are kept under conditions where it is difficult for them to get enough nutritious feed to keep in good breeding condition, a strong, healthy lamb crop need not be looked for. It is quite natural for the farmer to carry his breeding ewes thru the winter as cheaply as possible on account of feed costs. Such practice is commendable, but it must not be carried to an extreme and the ewes made to go up to lambing time on a ration that does not meet the requirements of the animal body for wool and lamb production. The feed allowance during the latter part of the gestation period should be more liberal than during the first two months of the period.

The selection of the feeds to give to breeding ewes will depend in a measure upon the feeds at hand and

necessary to feed very much grain before lambing time. It will usually pay to start feeding a small allowance of grain about four to six weeks before lambing time and allow it in amounts ranging from one-quarter to one-half pound per day, depending upon the condition of the ewes. After the ewes have lambed, the amount of grain allowed may be further increased if it is deemed necessary to do so to stimulate and keep up the milk flow for the lambs. Any additional feed allowed during the period while the lambs are suckling the ewes will reflect in the condition and development of the lambs. The combination of feeds used should consist of a variety and be rich in protein. A very desirable combination is one made up of three parts corn, three parts wheat bran and one part oil meal. A small amount of oil meal and oats may be fed, or a combination of four parts oats, three parts bran, one part oil meal will make a desirable ration. The grain mixture may vary considerably, depending upon the kind of roughage that is allowed. The prin-



Kaltuma Little, Millbrook, Pa., Club Prize Winner of \$50 in 1919

the kind that can be purchased to best advantage on the market. If there is an abundance of good clover or alfalfa hay on the farm, such hay should form the major part of the roughage allowed. If corn silage is available, the ewes should be given a limited amount of this feed in addition to good hay. An unlimited silage ration as roughage is not recommended as such practice seems to result in the ewes producing weak lambs. A combination of corn silage, not to exceed three pounds per day for a large ewe, and as much additional hay as they will consume, will make a desirable roughage ration. Breeding ewes should not be fed timothy hay as it is a poor sheep feed and also causes trouble from constipation. Oat straw and corn stover may be used, but when fed they should be given in combination with a legume hay or corn silage and a greater grain allowance. If silage is fed to sheep care must be exercised that it is in good condition, made from fairly mature corn and that it is not decomposed or moldy, as such silage is likely to cause abortion trouble among the ewes.

The amount of grain to feed and the length of time before lambing to feed it will depend upon the condition of the ewes. If the ewes are in good, thrifty condition and are getting splendid roughage, it is not

LIVE STOCK REPORTS

Nearly ten million less head of live stock were on farms in the United States on January 1, 1921, than a year preceding, according to estimates based upon reports of agents and correspondents of the Bureau of Crop Estimates, United States Department of Agriculture. Horses decreased about 602,000 head, or 2.9

February 12, 1921.

per cent; mules decreased slightly, 42,000, or 0.8 per cent; milk cows decreased, 298,000, or 1.3 per cent; other cattle decreased 1,880,000, or 4.2 per cent; swine decreased 5,078,000 or 7.1 per cent, and sheep decreased 2,047,000, or 4.3 per cent.

The total numbers on farms and ranges January 1, are estimated as follows: Horses, 20,183,000; mules, 4,999,000; milk cows, 23,321,000; other cattle, 42,870,000; swine, 66,649,000 and sheep, 45,067,000.

The total value of live stock has declined \$2,271,576,000 or 26.7 per cent during the year; that is, from a total of \$8,507,145,000 on January 1, 1920, to \$6,235,569,000 on January 1, 1921. This decline is due partly to the reduction in numbers, but more to the lower value per head.

Horses, with a value of \$24.45 per head as compared with \$24.42 a year ago, are lower than they have been since 1906. The total value of horses is estimated at \$1,664,166,000, which is \$298,337,000, or 15.3 per cent less than a year ago.

Mules have declined in price relatively more than have horses, due, probably, to the depression in the cotton states, where mules are largely used. The January 1 price, \$115.72, is the lowest value since 1916, whereas the value a year ago, \$147.07 was the highest on record. The total value of mules is \$578,473,000, a reduction of \$162,927,000, or 22 per cent as compared with a year ago.

Milk cows have declined 24.8 per cent in value per head, from \$85.11 to \$68.97, and in total value have declined \$518,228,000, or 25.8 per cent, from \$2,010,128,000 to \$1,491,900,000. Other cattle have declined 27.3 per cent in value per head from \$43.22 to \$31.41; and in total value have declined \$587,520,000, or 30.4 per cent, from \$1,934,185,000 to \$1,346,665,000. All cattle have thus declined \$1,105,748,000, or 28 per cent, from \$3,944,313,000 to \$2,838,565,000.

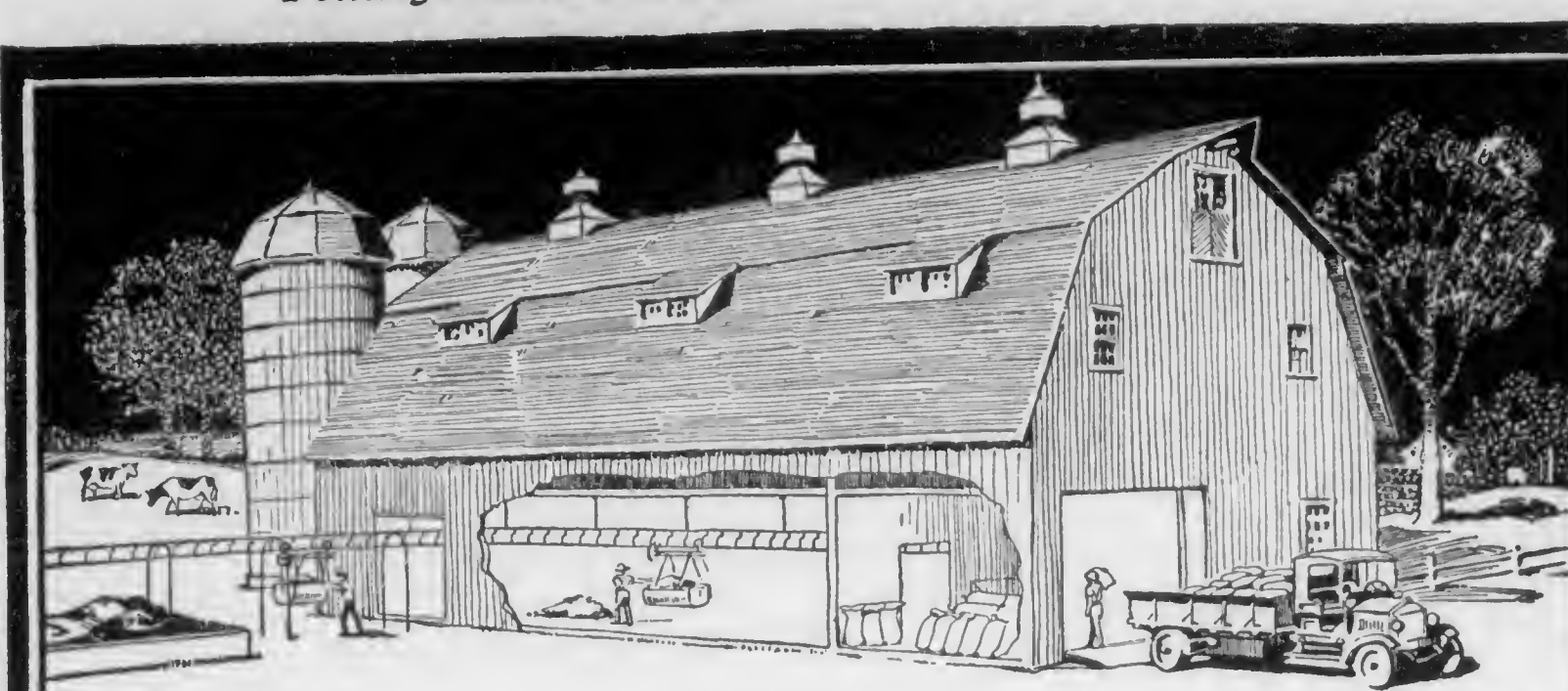
Swine have declined in value per head \$1.7 per cent, from \$19.01 to \$17.99, and in total value have declined \$497,636,000 or 36.6 per cent, from \$1,363,269,000 to \$865,633,000.

Sheep have decline in value per head \$9.1 per cent, from \$10.52 to \$9.61, and in total value have declined \$206,928,000, or 41.8 per cent, from \$495,660,000 to \$288,732,000.

COMMITTEE OF 15 TO WORK OUT MARKETING POLICY

The American Farm Bureau Federation, on December 31, named a committee of 15 to work out a general policy of marketing live stock for the farmers of this country in an effort to help solve some of the problems that have made live stock such a hazardous undertaking in recent years. Men recognized as the best qualified to sit on such a committee were chosen and there is hope that something really constructive that can be applied to the problem will come from them. With Dean Skinner of Purdue, Senator Kendrick of Wyoming, and the biggest men in the various state beef organizations on the committee, the brains are there, anyway.

While most efforts at "stabilizing" the market and other ideas of smooth it out so that it will run evenly from day to day, week to week, month to month, and from one year's end to the next, have met with little success, that doesn't mean that there isn't room for genuine co-operative effort to make better live stock markets. We will watch the new committee with hope for a time, anyway.



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Fertilizer Problems for Vegetable Growers

Some Helpful Suggestions for Keeping Up Soil Fertility

By J. G. LIPMAN

THE vegetable grower more than any other type of farmer must maintain his soil in a very high state of fertility. To do this most effectively he should know something about the factors that influence chemical and bacteriological processes in the soil. To do this most effectively he must also know something about so-called soil humus and the part it plays in soil fertility. He must know something about the nature and the treatment of sour soils. He must know something about plant-food, the extent of its presence in the soil, the nature of plant-food constituents in commercial fertilizers, farm manures and green manures and the effect of fertilizer treatment on the fertility of the soil. Vegetable growers should remember that the organic matter of the soil, commonly spoken of as humus, has certain relations to moisture content and temperature of the soil. It is well known that the space not occupied by solid particles, and known as the empty space or pore space, may be occupied either by water or air. The best conditions for plant growth are created when about half of the empty space is occupied by water. If too much water is present bacterial activities are interfered with and available plant-food is not produced rapidly enough. If too much air is present in the soil the plants are not properly provided with moisture and there is a tendency for the soil humus to decompose too fast. This may result in a loss of soluble nitrates and of other soluble plant-food by leaching. By increasing the amount of organic matter in the soil the conditions as to the supply and circulation of moisture are improved. The bacteria and other invisible organisms are provided with a sufficient supply of food and, because of their greater activity, they cause the formation of larger quantities of soluble and available plant-food.

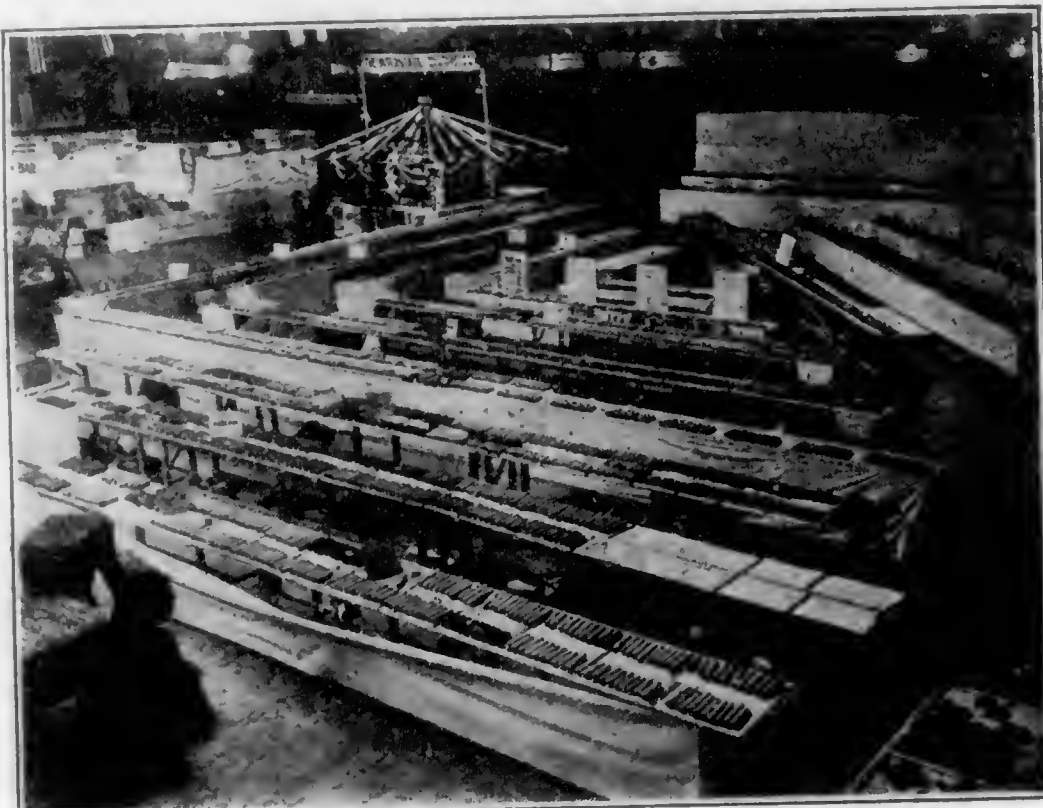
The vegetable grower is at a loss how to find a satisfactory substitute for stable manure, which in years past was both ample as to supply and moderate as to cost. With the replacement in our cities of the draft animals by motor-driven vehicles the supply of stable manure has fallen off. The price has also increased to a point where it is compelling the grower to reduce the amounts supplied per acre. It is necessary, therefore, to think of a satisfactory substitute for stable manure if such can be found. Among the materials that may be suggested as substitutes are composts, peat and green manures. It is still the practice in Europe to compost manure with all sorts of refuse material, including, weeds, low-grade straw or hay, leaves, pine needles, etc. This is done for the purpose of increasing the supply of organic matter and of digesting, as it were, the insoluble and lower grade materials and transforming them into a more readily available manure. Before the days of commercial fertilizers, it was the custom in the United States to compost manure with peat or other refuse materials. It is claimed by Dr. S. W. Johnson, in his Muck Book, published soon after the middle of the last century, that one load of good manure mixed with four loads of peat or muck would produce material that, load for load, is just as efficient as composted manure itself. There are large supplies of peat in New Jersey and on every farm there are quantities of waste vegetable materials that could easily be transformed into good fertilizer by composting with manure. Because of the high cost of labor, composting may become an expensive process. It has, however, its possibilities even with the high price of labor, and it would not be out of place for us to consider the practical side of composting in the hope that we might effectively revive a practice that at one time played so important a part on the farms of America.

As to green manures, the vegetable grower is not always in a position to utilize them, since his soil is occupied by one crop or another from early spring until late in the fall. Something

may be said about growing clover, vetches, alfalfa, etc., on cheaper lands and hauling the green crop and spreading it as you would manure. This is sometimes done in the Oriental countries where labor is cheap. The same purpose may be accomplished at a smaller cost by arranging the rotations so as to allow the land to remain in alfalfa or a mixture of alfalfa and some other legume or another grass mixture that would allow the accumulation of organic matter. A good soil of this sort would then furnish ample humus for fairly intensive vegetable production.

Most of the soils in the humid regions of the United States are acid. On the other hand, most of the soils of the arid or semi-arid sections of the United States are the opposite of acid. Soils used for the growing of tilled crops in the humid regions of the United States tend to become more acid as the years go by. Hence, the need for liming arises. Smaller quantities of acid in the soil are not in themselves objectionable, but, as the acidity increases, profitable crop production is interfered with. Hence, the vegetable grower, who is using large quantities of commercial fertilizer and thereby increasing the loss of lime from his land, should consider the more or less systematic use of lime. However, it is well to remember that where stable manure is used more or less regularly the accumulation of acidity in the soil is retarded and, for this reason, the vegetable grower is not as greatly in need of lime as may be the general farmer who supplies less manure per acre and uses at the same time considerable quantities of acid phosphate, sulfate of ammonia and of potash salts. The vegetable grower may best provide against the accumulation of excessive quantities of acid in his soil by applying at frequent intervals small quantities either of ground limestone or of burned and slaked lime. By so doing he will assure conditions in his soil that will permit the best development of the plant roots and the formation of available plant-food by the germs living in the soil. This method will also prevent the accumulation in the soil of substances poisonous both to soil bacteria and to the crops. Very often vegetable growers may have the opportunity to buy at a low cost waste products containing lime, as, for instance, lime from acetylene plants, wood ashes, lime marl, etc. These can all be used to advantage for maintaining the land in a suitable condition.

Part of Displays at New Jersey Products Show



Among the plant-food problems that call for consideration on the part of the vegetable grower mention may be made of commercial fertilizers. There is a strong tendency in the fertilizer industry to develop more concentrated and more readily soluble fertilizers. New products, like double superphosphate containing 45 to 48 per cent of available phosphoric acid, ammo phos containing 13 per cent ammonia and 48 per cent phosphoric acid, nitrate of ammonia containing 33 to 44 per

cent of nitrogen, and others, are being developed and tried out under different soil and climatic conditions. These more concentrated fertilizers are cheaper to transport and to handle. On the other hand, because of their ready solubility and concentration, they are apt to burn the crop when used in larger amounts or where they are improperly distributed in the soil. The vegetable grower should also consider the question of suitable proportions among the ingredients in commercial fertilizers. Recent investigations show that it is important to use not only sufficient amounts of plant-food, but the different ingredients, such as phosphoric acid, potash and nitrogen, should be applied in suitable proportions to one another. It has been found that fertilizer mixtures containing four per cent of nitrogen, eight per cent of phosphoric acid and four per cent of potash contain the three plant-foods in about the right proportions. Roughly, one part each of nitrogen and potash and two parts of phosphoric acid seem to best meet the conditions as they exist in most soils. Other formulas like 5-8-5, 6-8-3, 5-10-5, etc. also seem to give fairly satisfactory returns. However, much will depend on the crop itself and on the nature of the soil as well as on the use of other materials. However, it is well known that the vegetable grower, who is aiming to produce large yields and to get his crop ready for the early market, must use not only generous amounts of plant-food but also fertilizer containing a high proportion of nitrogen.

It is important to remember that where large applications of commercial fertilizer are made they should be thoroughly distributed in the soil. It would also be well to remember that the nitrogen of nitrates and salts of ammonia (the most expensive constituents in mixed fertilizers) is sooner or later apt to leach out of the soil, and, for this reason, should be used so as not to allow undue waste. Where nitrate of soda is used in amounts up to 300 pounds per acre, or even more, two applications are often found more profitable than one. On account of the well known tendency of large quantities of soluble nitrogen fertilizers to force vegetable growth and to suppress the production of seed, seed, root and tuber crops should not be given excessive quantities of soluble nitrogenous fertilizers.

Finally, something should be said about the relation of certain materials, like sulfur, formaldehyde and carbon bisulfide, for controlling soil insects and certain diseases of crops. By the use of these materials injurious insects may be controlled or eliminated and certain of the diseases of plants may be made much less harmful.

HARFORD COUNTY CORN WINS

Harford County, Maryland, thru the efforts of G. P. Radebaugh and Sons, was again successful in defeating all competitors at the Pennsylvania Products Show. For several years we have tried to get an entrance into the Pennsylvania Products Show. This year we were permitted to come in under what was known as the World Class. By that is meant that the champion ears from other states having won in their respective states, would be thrown into that class along with others and then the champion exhibits from different sections of Pennsylvania would also be entered in that class.

After the judging of all the Pennsylvania corn had been finished and the champion exhibits in their respective classes were brought into the world class, we found that there were exhibits from five states. The exhibits from Harford County were so close that it took considerable time to determine the winner. The exhibit of Reid's Yellow Dent by Mr. G. P. Radebaugh & Sons was finally given first place, the second exhibit being that of Mr. Garnett Radebaugh.—B. B. Herrick, County Agent.

Orchard Machinery for Eastern Conditions

A Discussion of Implements Found Effective and Economical

By Prof. H. B. SEAVER
N. J. Experiment Station

THERE have been such rapid strides in the development of agricultural and horticultural machinery in the last decade that it keeps the average orchardist jumping to keep up with them. There have, likewise, been many machines put on the market which the orchardist has been inveigled into buying by the clever talking salesman only to be compelled, after a season's trial, to relegate them to the scrap-heap. There are more monuments to the gullibility of the average American farmer, with his motto "I'll try anything once," in the orchard machinery scrap-heaps, scattered behind barns around the country, than there are tombstones in the graveyards. There are almost as many different makes of machines as there are tombstones.

There are two categories in which we may place orchardists. First, the orchardist who raises his fruit as a side line. Second, the bona-fide commercial grower who specializes in fruit, and has an orchard of twenty-five acres or more.

For the first-class of orchardists, it is advisable to utilize general crop machinery for orchard operations, and purchase in addition some sort of spray outfit. A small, or one of the so-called "pony" or "Junior" rigs is advised if he has an orchard of from five to fifteen acres. This equipment should be sufficient to do his spraying.

In the second category we find a different proposition. The commercial, specializing, fruit grower must spare money with which to buy the improved types of machines, which he knows will save labor, or do a better job in his orchards, or packing house; or in other words any machine which will prove a profitable investment for him.

Orchard machinery may be divided into 4 groups. First, tillage machinery; second, spraying and dusting machinery; third, sizing and grading machinery; fourth, traction and miscellaneous machinery.

The common practice of most orchardists, who carry out the clean culture and cover crop method, is to break the land as early in the spring as possible with either the plow or the disc harrow. One year he throws a furrow to the trees, and the next year he throws it away from the row. This keeps the surface level. Such a practice, of course, requires close work. The writer knows of no better tool for this work than the one-horse, set-over beam walking plow. A narrow whiffletree, padded on the end with an old burlap sack, so as not to bark the trees, a steady, straight-walking horse, and an even tempered driver make up the other requisites to do a thorough job. After three furrows are plowed to the trees, the balance of land between the rows may be finished with the two-horse walking plow, or the tractor and tractor plows. When we come to plowing away from the trees, we simply plow as close as possible with the larger plows, and then setting the beam of the one-horse plow away from the

trees get as near as practicable without damaging them. The plowing away practice requires a more even tempered man, and a steadier horse than the plowing to the trees. The two-horse walking plow should have a wooden beam, and be of as light draft as possible.

It is not good orchard practice to plow over five inches deep, and the average farm team should be able to pull a fourteen inch bottom walking plow without extra effort. The type of moldboard should be low, with a sharp flare, so that trash may be covered deeply, and not interfere with the spring-tooth type of harrow, which will follow later.

Concerning tractor plows, the writer likewise advises the use of a low mold board with considerable flare. By using two tractor plows with much flare the writer was able to dispense with the one-horse plow in plowing to one and two-year-old trees, and throw the furrow directly against the trees.

It is a question whether it is profitable to use more than a two-gang tractor plow in the orchard under our modern system of close planting.

The next machine on the list, the disc harrow, is undoubtedly the most valuable tillage machine

With the tractor-disc combination we have weight and width combined, and the soil can be pulverized to a depth of four inches, and the cover crop thoroughly incorporated in one-third of the time that it would take to plow it.

Mulching Tools

Mulching tools are the next to be considered. Probably nothing counts so much in sizing up our fruit, under eastern conditions, as the ability of the orchardist to keep a good dust mulch, and his soil free from weeds, until July 1 to 15th, when our orchards should be sowed to a cover crop, so that the trees may go into winter in a mature condition.

The spring tooth harrow is a good tool for mulching purposes, but is of heavy draft, and picks up too much trash. However, it is much in use, and if the trash has been thoroughly turned under it proves a very fair tool.

There is another implement, recently introduced on the market, which is far superior to the spring tooth. This is the "Light Draft Extension Orchard Harrow." This harrow has the following features about it, which probably make it the best orchard mulch harrow in use today. First, it is of very light draft so that a team of heavy horses will pull it readily, if not set deep and with every other tooth removed; second, it extends out sufficiently so that it works up close to the trunks of our low headed trees; third, it is so arranged that it may be tripped at the option of the driver and rid of any trash that may have collected on the teeth; fourth, it may be set at any depth so that if the soil has become hard after a heavy rain, it may be again broken up to a sufficient depth, and lastly it has, with its 12 foot sweep a space devouring capacity which is not equalled by any other machine.

A 11½-foot harrow and a 10-20 tractor will cover 35 to 40 acres a day. The large spike tooth harrow is sometimes used, but it is entirely unnecessary if the owner possesses a light draft type of harrow.

In the second group of orchard machinery, comprising sprayers and dusters, we have many makes. However, they all may be classed under four divisions; the hand pumps, the power sprayer, the compressed air sprayers and, of course, the power dusters.

The duster has probably come to stay for the peach grower. In comparative tests, by the various experiment stations, with spraying in the last two years, it has shown that it controls peach scab, brown rot and curculio just about as well as spraying, with this in its favor: That the time required for the actual operation of making the application is about four to six times faster than spraying. To date it has not proven satisfactory as a substitute for spraying the apple, except that

(Continued on Page 21).



Efficient Orchard Machinery Makes for Economy of Labor and Time



Dusting is Gaining Favor With Many Orchardists Others Prefer the Liquid Spray Method as More Economical of Material



TOP-DRESSING TALK No. 4

Top-Dressing Wheat Pays

At the beginning of the growing season the young wheat plant weakened by the severe winter weather, needs plenty of quickly available nitrogen to restore it to a healthy, vigorous condition.

The average soil does not supply enough usable nitrogen this early in the season, and unless a nitrogenous top-dressing is applied the crop is held back to the detriment of the final yield.

Quickly available nitrogen, applied just as soon as the frost is out of the ground, will stimulate stooling and result in more and better filled heads. Where the stand of wheat is a little light this increased stooling is absolutely necessary, if a normal crop is to be obtained.



Experiment on the Farm of M. Kindig, Seville, Ohio. Gain from Top-Dressing with Sulphate of Ammonia, 13 bushels per Acre.

Arcadian Sulphate of Ammonia

Arcadian Sulphate of Ammonia is the ideal top dressing fertilizer. It analyzes 25½ units of ammonia, all soluble and quickly available. Being a non-leaching fertilizer the application can be made as early as needed and less will be required to produce results.



Arcadian is fine and dry and can be applied evenly and uniformly by hand or with the grain drill. Fifty to one hundred pounds per acre is sufficient.

Arcadian is for sale by the larger fertilizer dealers and their agents.

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for Bulletin No.
86—More Wheat!

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B. K. ZEHNER, NEW RINGGOLD, PA.

Making Lime-Sulphur on a Big Scale

By J. P. STEWART

PART of the interest that we anticipated in reducing the costs of production in fruit growing this coming year are shown in the letter which follows. The writer in this case is evidently tackling the matter of making his own spray materials on a very large scale. His plans and inquiries may be of interest to others.

The writer wishes to be advised as to your recommendations for the making of lime-sulphur solution with steam, and as a guide to such recommendations submits the following data and questions:

We have available a 15 H. P. steam boiler, and wish to cook 1000 gallons of concentrate at one time. It is planned to run the solution directly into 50 gallon barrels as soon as cooked, as our neighbors depend upon our plant for their supply. The sediment will be removed for the most part by screening, although the sludge passes on thru with the solution. This sludge, by the way, is considered a valuable ingredient by our growers, as it makes the solution show up more clearly on the trees, acting as a "marker."

What type of screen would be advisable for us to use when filling barrels?

Shall we use a closed steam coil, a perforated coil, or an open steam jet for cooking? Assuming a wood tank (cyl.) 6 ft. inside diam. and 6 ft. 6 in. high inside, about how many linear feet of 1-in. pipe for coils, (steam pressure at tank say 60 lbs., initial temp. of water in cooking tank about 57 degrees), to boil the 1000 gallons of concentrate?

In our original cooking tank (direct fire) we used a mechanical agitator constantly. Will this be necessary with either closed or perforated coils?

A tank to hold 1000 gallons of solution should be larger to provide for the boiling up and "foaming" of the solution while cooking. A tank 6 ft. x 6 ft. 6 in. holds roughly 1350 gallons. Would you consider this a well proportioned tank for the purpose?

The matter of stones in poorly burned lime is always troublesome. These accumulate in the bottom of cooking tank as you know. It has occurred to us to use a large basket of heavy close-mesh wire to fit rather neatly inside the cooking tank to catch these stones and other sediment. This basket could be hoisted out when necessary without having to empty completely the tank. If an agitator were used it might interfere with it, what suggestions have you along this line?

We have always made a practice of reducing the sulphur to a paste before adding to the cooking tank. Do you recommend this? Is there any advantage in adding the sulphur either before or after putting in the lime? We use freshly burned lump lime.

According to the formula we use, 1000 gallons of concentrate will require 1000 lbs. of lime, 2000 lbs. of sulphur and 1000 gallons of water. Just how should we proceed with these larger quantities to avoid "drowning" the lime? Is this 50-100-50 formula as efficient in utilization of materials as any other?—W. P. M., Virginia.

Taking these points in the order presented, I would advise the use of a tinued iron wire screen for the strainer, made with about twenty meshes to the inch. I would also prefer a strainer of the type which strains the material upward thru the screen, instead of downward, the directions for the construction of which have been given before in this column. A strainer of considerably greater capacity than the one previously outlined would be preferable here, however.

The best results with steam cooking are obtained by the use of a perforated coil or pipes, with the perforations all being made on the same relative side of the pipes, so that the escaping steam will tend to develop a good swirl in the mixture and thus reduce the necessity of stirring. Two pipes in the form of a cross, and as long as the diameter of the cooking vessel will permit, should be sufficient to do the work if the boiler will furnish the steam fast enough.

Stirring would be needed with a closed coil as much as with a direct fire. It should not be needed so much with a perforated coil however, but the amount actually needed in the latter case would have to be determined by the results secured.

I would consider the proportions named very satisfactory for steam cooking, and would expect that a margin of even 250 gallons, or 25 per cent, should be ample to prevent any appreciable loss from boiling over.

The wire basket suggested should be entirely practicable, but if one gets the right kind of lime—well-burnt and high in calcium, at least 90 per cent CaO, and then use only enough water in the slaking to keep it coming right, the basket should not be necessary.

It is not necessary to reduce the sulphur to a paste before adding it to the cooking tank, provided sufficient facilities are available to sift the lumps out, and to reduce it to the desired condition in the cooking vessel, which is much easier than to mix it with water directly. It also makes no special difference just when the sulphur is added, but the lime usually slakes better if it has a chance to get well started before the sulphur is added. Freshly burned lump lime that is high in calcium is the best kind to use. I would use only enough water at first to get the lime started slaking. It should not be covered with water at any time prior to the start of the slaking, and it may be that better results are obtainable when the slaking is completed before the additional water and the sulphur are added.

The formula indicated—1-2-1—makes a very satisfactory product from the viewpoint of both storage economy and utilization of materials. For the best utilization of materials, however, we have found that an increase in the volume of the product of about a third, which should be maintained thruout the cooking, will give materially better results. A typical formula under the latter relative volume, is 45-90-60, which makes up very nicely in a 70 or 75-gallon cooker.

True apple blotch is not so difficult to control, judging by the experiences of Iowa apple growers who spray continuously and consistently thru the growing season. However, it is harder to control than the sooty blotch. I quote Robert Clark, an Iowa orchardist, who has had remarkably clean fruit year after year: "We and others whose experience I am acquainted with have been able to control true apple blotch with Bordeaux mixture 4-4-50 or 5-5-50. This will give effective results when applied in an extra spraying about three weeks after the ten day application. This is the last week of June in this country."

"Up to 1920 I believe most expertment stations recommended Bordeaux in this special June spray."—E. A. K.

VALUE OF GROWING CLOVER

I have yet to see the farmer who has succeeded without growing clovers or some equally good legume. There is a steady influence in the adoption of a system that includes them as regularly as they may be grown. If others cannot succeed without them, how may we expect to continue our farm operations on a profitable basis if we fail to sow the seed when it seems that seed prices are a little out of proportion to the prices of other farm products?

Last year we paid what I thought was high prices for our seed. Seed I ordered in January cost \$30 a bu. It took like putting a lot of money into such a little bit of seed. But as we had not failed in thirty years to sow clover seed, and knowing how handicapped we should be without one-third of the farm in clovers, every acre that was in small grain was seeded to clover when conditions seemed most favorable.

My records show the cost of seeding last year to be as follows:

Alsike, 5 lbs.; timothy, 3 lbs., \$2.82 an acre.

Sweet clover, 9 lbs., \$2.85 an acre. Alfalfa, 7½ lbs.; alsike, 2½ lbs., timothy, 1½ lbs., \$3.28 an acre.

Big English, 6½ lbs., \$3.75 an acre.

Excellent stands were secured with all these seedings. We did not at that time look for such economic conditions as exist this year, but having our regular clover crops made it much easier to plan our operations for the coming year and gives us a chance to practice economies that would not have been possible had we omitted seeding just because the prices seemed too high to justify sowing. Our work and plans will not be unbalanced as they would have been had we left out the clovers. As viewed today, it may seem like a big price to have paid for the seeding, but when the numerous benefits are counted, it would seem that it was more than worth the cost.

This year will find us seeding clovers again as usual, because we cannot farm to advantage without them. If they should be omitted, next year would find us with an abnormally large oats or corn crop, or both, as they or soybeans would have to be grown to take the place of the missing clovers. While we grow soybeans also, it would not be advisable to make them entirely replace clovers because of the great amount of labor required to grow them and a corn crop also.

While the cost of clover seed is much less this year, it is relatively little or no cheaper, I believe, compared to prices of other farm products. A bushel of corn will not buy as much seed this year as it did last year. Just at present corn, locally, is 55c a bushel and clover seed is about \$12 or more. A bushel of wheat or rye will buy more clover seed this year than it did last, and yields of both these crops are maintained or increased by growing clovers in the rotations.

It would not seem to be very good policy to wait for clover seed prices to get lower before sowing, for much may be lost in the meantime—unless soil conditions are such that it is difficult or impossible to secure a stand. Don't be completely discouraged because red clover and alfalfa fail to catch or because the stand is thin. Perhaps the land may need doctoring—draining or liming. Perhaps there isn't enough money now to carry out the improvement required in the soil to better adapt it to red clover; most of us have experienced such a time.

It is very likely that it can be handled so that it will have a legume crop on it while soil improvement is being made over a period of years, as funds permit.

Alsike will grow on undrained and cold wet soils much better than red clover, though it is not quite as good a soil improver because it is more shallow rooted. The seed is small, making it a little cheaper to seed. If you have damp, undrained spots in fields try alsike and timothy in them; they make an excellent hay crop. We have made heavy cuttings from such seedings. Just enough timothy should be used to hold up the alsike, unless the hay is desired for horse feed when more timothy may be used.

Sweet clover is a great soil improver, but it will not do well in a cold, wet soil like alsike. Sweet clover does not thrive on sour land. However, it will often do better on a thin run-down soil than clover or alfalfa. Where we grow sweet clover and soybeans we have no trouble in getting corn crops.

Whenever we let any of these clovers go until the latter part of April of the second year for soil improvement purposes they do wonders to the corn crop if they are disced up well and plowed under and the ground disced again soon after plowing to open and pulverize the soil so as to hasten decomposition of the clovers. It is well to remember that there are several ways of handling clover to make it profitable. But it seems to me that waiting for the seed to get cheaper before sowing is one of the most unprofitable methods to pursue when clover can be grown.

—J. L. Justice.



The silver lining to the passing cloud

Ever hear the old saying "High-priced seed means a low-priced crop"? Ever notice that the reverse is equally true—and that today's situation should therefore spell OPPORTUNITY to the farmer who has "his ear to the ground and his eye to the future"?

He knows that over-production never occurs two years in succession. He is assured better distribution of next season's crops because of greatly improved transportation conditions.

That is the "silver lining" the wideawake farmer sees on the cloud of low prices now passing. While others are waiting, he is acting. And when the rise comes his crops are ready; he "cashes in".

He is going to use fertilizers—good fertilizers. For he is the kind of farmer who never thinks of missing the profitable extra yield they produce. He is ordering them now—to avoid last-hour rush and probable delay in getting them.

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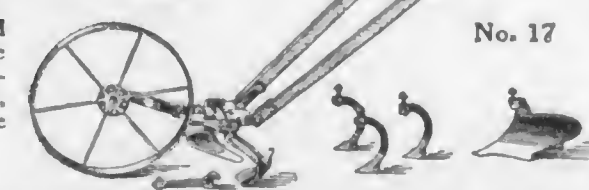
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No. 17 Planet Jr. Single Wheel Hoe is the highest type of single wheel hoe made. The attachments for cultivating, hoeing, hilling and plowing are all the best of their kind.



No. 17

—J. L. J., Indiana.



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PHILADELPHIA, PA., FEBRUARY 19, 1921

VOLUME 49 NUMBER 8

OUR JOB is to serve our readers. Whenever you are
puzzled, write to us and we will help you if we can.

—The Editors

He who waits to do a great deal of good at once,
will never do any.—Dr. Johnson.

Protest Daylight-Saving

AT THE TIME this is written (February 12) we have received protests against the daylight-saving plan from 7,455 people in Pennsylvania, 1,337 in New Jersey, 951 in New York, 140 in Maryland, and 43 in Delaware.

We doubt if there ever was a subject before the farmers on which they were so fully united as they are upon this one. In the great majority of letters containing a protest was a note saying that the farmers in writer's neighborhood were unanimously against it. Out of the almost 10,000 votes received, but a single vote was cast in favor of the daylight-saving plan, and the writer gave a street and number in Pittsburgh as his address.

We will present these votes and petitions where they will be most effective in all the states. If the law makers have a regard for doing the thing which will be most appreciated by those whose business depends almost entirely upon a full utilization of the time in summer they will vote against the bill to establish daylight-saving in Pennsylvania, and vote for the repeal of the law in other states.

A few extracts from the hundreds of letters received will be found on page 28 of this issue.

Honest Advertising

IN REPLYING to our request for suggestions and comments on Pennsylvania Farmer a woman wrote as follows:

"We gauge the responsibility of a farm paper and estimate its value to us quite as much by the character of the advertisements it carries as by its editorial matter. We have found that if a paper carries advertisements of unreliable firms or questionable enterprises its reading matter is also of an inferior sort. Farmers come to depend upon the farm paper they read and all publishers should feel their responsibility in this matter. For this reason we are regular subscribers to Pennsylvania Farmer as one of our three farm papers."

Comments of this kind are highly appreciated. One of the steadfast principles upon which Pennsylvania Farmer is based is, that so far as it is humanly possible to insure it, the advertisements as well as the text matter are true and reliable. Aside from the fact that most men and firms, under ordinary circumstances, do business upon a moral basis, there is the well founded belief in the truth of the old maxim, "Honesty is the best policy."

Pennsylvania Farmer

Back the Bill for a State Fair

CONSIDERING the unanimity with which the proposition to establish a State Fair in Pennsylvania was seconded by the farmers and farmers' organizations of the state, the very general interest in the subject by all classes and the recommendations made by the Governor it would seem as if there should be little opposition to the passage of a law establishing a State Fair.

But it seems that a small group of people known as the Pennsylvania Fair Association, which is composed of the officials of some of the county fair associations, have become alarmed. They fear that a State Fair would overshadow and thus injure the county fairs and have started a campaign of opposition to the establishment of a State Fair. The association held a meeting at Green's Hotel in Philadelphia last week and adopted strong resolutions on the subject.

A reading of the resolutions adopted and the speeches made show plainly that these promoters of county fairs have little knowledge of the actual effect of a good, state fair upon the development of county fairs. If they would but investigate the matter they would find that the states having the best fairs also have county fairs that far outstrip the present county fairs of Pennsylvania, and that the county fairs are in reality agricultural fairs, something that is not true of all the so-called county fairs in Pennsylvania at present.

Those who are backing the State Fair project, and they are the real farmers and farm organizations of the state, have no desire to injure in any way the county fairs, and they are convinced that one will help the other. The success of our excellent State Products Show is largely due to smaller district and county exhibits—the latter being inspired by the anticipation of competing at the State Show. The same principle works in relation to county and state fairs where they exist.

We dislike to impute wrong motives to the county fair association, but they have started opposition to a well intentioned project, introduced and backed by the rank and file of the farmers of the state, and as spokesmen for farmers of the state, and we mean to fight for a State Fair to the end. The real bone of contention is discovered in the reported speech of the secretary of the association, part of which is as follows:

"County Fairs are the last enterprise that should be so many times attacked by adverse legislation, considering the great good they do for the public of Pennsylvania and their own vicinity. The great helping hand County Fairs are for the betterment and promotion of agriculture, it seems as if they wanted to bite the hand that has helped so long to feed them, being the most ungrateful act that any human being could foster for the machinery of agricultural progress."

"The session of Legislature of 1921, of Penn-

One has but to turn to the files of papers and magazines published a generation ago to see the change that has taken place in the kind and character as well as the appearance of advertisements. Instead of the uncensored, extravagant claims made for anything a producer might wish to foist upon a gullible public we have in the reputable papers advertisements only of reliable and legitimate articles, prepared by men who make it their business to say the most in the fewest words and in the most convincing manner.

Advertising is recognized as the cheapest and most effectual method of introducing and selling goods. It is universally recognized by producer and buyer as the most legitimate and logical means of conveying a knowledge of the world's products and of man's needs and luxuries. In these days of quick and wide dissemination of knowledge, every intelligent man knows that he cannot misrepresent his products and remain long in business. Most men covet a reputation for honesty, and since he knows that what is down in "black and white" cannot well be repudiated, his advertisements are likely to be dependable. When there is added to this the careful scrutiny and investigation of the reliable publisher, the reader is doubly protected against the possibility of fraudulent advertising.

sylvania, is now in session and while only fairly started, several bills have already been introduced that compelled me as your secretary to previously ask you for your co-operation at once. That is, to interview your Senator and members of Legislature of your county, that you are to explain to them the hardships these bills if enacted as a law would be to the County Fairs' future success and continuance. Be sure to get their pledge to vote against adverse legislation and support any or all bills that are a benefit to County Fairs without your support; otherwise my efforts are all in vain.

"Our state appropriations are getting smaller in place of larger. The more work we do the less pay we get, with all our continually increasing costs to maintain a fair, our state appropriation should be double, and next should be paid to us with a willing feeling not with a reluctant look. We as County Fairs have been here many over a half century, being here first and not fully provided or cared for. There should be no new addition to the fair family or any new adoption."

There we have the trouble in a nutshell—the fear that a State Fair might jeopardize the appropriations to the county fairs. We believe that such a fear is groundless. The effect of a state fair is to supplement, not supplant, the county fairs, and those worthy of state support will likely continue to get it. It may be said in this connection that some county associations fail to receive their appropriations because the fairs are not run in accordance with the law.

As far as we are acquainted with county fair managers we are safe in saying that the majority of county fairs are not conducted or managed by genuine farmers. In many instances the name agricultural fair is a misnomer. The term is frequently used to cover what is little more than an exhibition of horse racing and questionable side shows, and the agricultural exhibit is almost negligible. In many cases the swollen attendance figures cannot by any stretch of the imagination be construed to mean that the farmers of the county are in sympathy with the management of their county fair.

As reported in the daily papers the officials of the organization attacking the establishment of a State Fair elected for the coming year are as follows: Al White, Indiana, president; Walter Buckman, Byberry; Abner S. Deysher, Reading; C. R. Cummins, Erie; C. R. Brennan, Altoona, vice-presidents, and Jacob Seldondridge, Lancaster, secretary-treasurer. The executive committee is composed of: John Bollman, Lebanon; S. H. Russell, Lewistown; Herbert C. Heckert, York; J. H. Maust, Bloomsburg; Harry B. Schall, Allentown; Hon. N. L. Strong, Brookville; C. C. Smith, Warren; H. O. Holcomb, Conneaut Lake; W. H. Deeter, Myersdale, and J. L. McGough, Myersdale.

We are not in any way questioning the integrity of these men, but we would like to know how many of them are farmers, or how many are duly elected by farmers to represent them.

Our Washington Letter

Notwithstanding the reports that wool consumption for December showed a decrease compared with the preceding month; that on January first 54 per cent of the wool textile machinery in this country was idle, and many cargoes of wool have arrived here or are headed for American ports, there is an encouraging trend in the wool market. According to the wool market specialists of the Department of Agriculture there is now a better market for domestic wools than at any time in the last three months, with a better demand and better prices. They report that territorial wools are in demand on the Boston market at prices ranging from 85 to 95 cents a pound on a scoured basis. There is a scarcity of fleece wool reported, with stocks on hand small.

Vast quantities of wool are coming into this country. There has always been a rapid increase in wool importations during an agitation in Congress for higher duties and just before the enactment of a protective wool tariff. This wool now coming to our shores, however, is low grade and does not come directly into competition with our domestic wools.

The latest development in the so-called adulterated butter tax situation is the information that Commissioner of Internal Revenue W. M. Williams has refused to make any concession to the butter manufacturers, except to postpone the date of the ten per cent tax becoming operative until April first. In the meantime a hearing will be given on February 25, before the Internal Revenue

February 19, 1921.

February 19, 1921.

Pennsylvania Farmer

7-207

enue Commissioner, for the purpose of giving the butter producers an opportunity to present their case.

This butter tax, if collected, will hit the packers to the extent of several million dollars a year, as they are among the large distributors of centralized creamery butter. It is claimed that this tax will effect the entire carton butter business in the United States.

A hearing will be held before the House Agriculture Committee February 15, on the Dyer bill to remove the tax on colored oleomargarine. This is the first time oleomargarine legislation has been taken up during the present session.

The Maryland-Virginia Milk Producers' Association, supplying Washington with milk, has decided to operate a plant in or near Washington, for the purpose of manufacturing the surplus milk of the members into butter, cheese and other products. The association has reduced the price of liquid milk from 44 to 36 cents a gallon.

After an unsuccessful attempt on the part of the friends of packer regulation to get the Senate bill reported out without amendment, the committee on Agriculture ordered a favorable report on a substitute bill, which places the control of the packers with the Federal Department of Agriculture, and places the stock yards under the jurisdiction of the Interstate Commerce Commission. The Senate bill creates a live stock commission to supervise the meat packing industry.

The American Farm Bureau Federation and National Grange representatives are working actively to get the packer bill out onto the floor of the House for action this session. It is the opinion of close observers in Congress that if the bill could be brought to a vote it would pass the House. The debate has been limited, and prospects are fair that the measure will be voted on by the 15th of this month. It is also hopefully predicted that the Senate bill will be presented for action on the floor of the House instead of the one reported out by the Agriculture Committee. This is believed to be the only possible chance of its becoming a law during the present session.

The friends of packer control legislation are confronted with a new and serious opposition to their measure, the United States Chamber of Commerce. Copies of their brief containing arguments against the proposed legislation have been sent to members of the Senate and House, and there has been sent out from the Washington headquarters of the Chamber to the 1400 organizations and more than 15,000 corporations, firms and individuals included in its membership, a request that they lend their assistance in opposing the legislation. This emphasizes the efficiency of the business men's organization in lining up their support or opposition to any measure before Congress, and also the necessity of the many farmers' organizations federating their interests under one great representative overhead organization, similar in its plans and methods to those now employed by the United States Chamber of Commerce.

The Chamber points out what it terms "the force of voluntary registration as proposed in the Senate packer bill." The measure provides that packers may register or not, as they wish, but to those that register the government grants special favors, such as assistance in procuring cars and the dissemination of information which it is alleged would place those not registering under serious competitive handicaps. The effect of the provisions would be to force corporations engaged in this business to register. Once they are registered the government assumes a control of the operation of the business that is equivalent to actual government operation.

The Chamber's Brief contends that this is the first time that the Congress has seriously considered taking control of the entire functioning of a private industry thru a government commission.

The Dairymen's Co-operative Sales Company of Pittsburgh, supplying the Pittsburgh district with liquid milk, has begun active work in its territory, comprising several counties in Ohio, Pennsylvania and West Virginia, to raise funds for the proposed Temple of Agriculture in Washington.

An amendment to the general Agricultural Appropriation bill, introduced by Senators Swanson and Glass of Virginia, authorizes the Secretary of the Treasury during the fiscal years of 1921-1922, to purchase at par and accrued interest, with any funds in the Treasury not otherwise appropriated from any Federal land bank, farm loan bonds issued by such bank. Such purchases shall not exceed the sum of \$100,000,000 in either fiscal year, shall be made only upon recommendation in writing of the Federal Farm Loan Board, and the bonds so purchased shall bear interest at the rate of 5 per cent per annum.—E. Reynolds.

HARRISBURG LETTER

A Question of Cash.—This session of the Legislature seems to have settled down to more of a

discussion of state funds than anything else and question of how much cash the general assembly will have to apportion is in reality attracting more attention than anything else. Generally, there are a couple of big legislative problems which form the chief themes, but this is the first session in years in which the alk has revolved so much about the funds. And yet no one can foretell now what the sum that can be safely appropriated will be. The Governor is talking about \$90,000,000, which means the income without new laws will shrink as compared with last year, while some legislators believe it will be closer to be closer to \$100,000,000. Powerful opposition will be manifested to the proposed coal tax of two per cent, to any tax on manufacturing capital and other forms of taxation and already theatrical interests are going after the amusements and billboard taxes. One of the greatest drawbacks to getting the session started is this uncertainty over the revenues. As soon as it is decided whether there will be any new revenue laws or not, things will begin to straighten out.

More Interest Asked.—Probably one of the most interesting addresses made in a long time was that delivered by the new Auditor General-elect, Samuel S. Lewis, who demanded that the state puts its money out at competitive bidding for deposits, as is done by many counties and cities. The state now gets two per cent and the depositors are selected by state officials. Mr. Lewis contends if the state has to pay more interest on its bonds there is no reason why it should not get more than two per cent on its deposits, which run into millions, and that every bank that can produce proper security ought to be able to bid for them. The deposits would be regulated by a state board already in existence, but never given a chance to do much. The speech has had the effect of waking up a lot of people to what has been going on and coming from a man who will soon step into the powerful office of Auditor General created a stir at the Capitol. The Lewis ideas will be incorporated in one of a series of bills designed to better the state's fiscal arrangements.

Are You Going to Build?

IF YOU contemplate building a house, barn, wagon shed, garage, tool house, milk house, or any other farm building, send us a rough sketch of the plan you propose, together with an estimate of what you are willing to spend for it. Also, state your preference of material. We will have plans drawn and suggestions for building prepared and mail them to you, reserving the right to publish those which would be of general interest. Mail them to us before March 15.

The New Constitution.—Hearings in regard to the bill for a constitutional convention may not be asked, according to some reports being heard here. Instead it is probable the bill may be pushed right thru to votes in the two houses so that the opposition may expend itself upon the floor. A number of interests are said to be against the plan of submitting a convention to the people, holding the time is not ripe, but the Governor is determined to go ahead with the plan as he is with the coal tax.

New Seed Bill.—Secretary of Agriculture Fred Rasmussen has about finished work on his new seed bill, under whose terms he believes it will be possible for the state to undertake a great deal of work of benefit to the farmers of Pennsylvania without much cost to individuals. The secretary is planning a system of requiring seeds to be sold under guarantees, for tests by the state and for stringent penalties. Now the state sends out men to sample seeds, but it is hoped to be able to supplement this inspection by offering farmers free examinations if they forward samples. This has already been done to a limited extent.

New State Fair Bill.—Plans are being made at the Department of Agriculture for a new bill to establish a State Fair, under the suggestions adopted at various meetings held here and elsewhere in the last year. The measure already in hand may be used in part, but the State administration is planning to submit its own bill. The Governor and Secretary are both of record as heartily favoring the State Fair project.

After the Thistle.—Steps whereby township and district authorities may hire men and teams to exterminate the Canadian thistle have been provided by a Senate bill. Under the present law the pay allowed is so small that the securing of men to do the work is almost impossible. The new plan would enable the state to pay the prevailing prices and get some action in destroying this pest. It is probable legislation supplementing the law on weeds will be introduced so that there can be effective work against the score or so of varieties that have gotten starts in the periods when farm labor was scarce.

Want to Fight "Yellows."—One of the inter-

esting facts connected with Department of Agriculture work just now is that so many orchard owners are asking for state aid in fighting the peach "yellows." They have figured out that the way to head off the pest which is reported sweeping up the state is to get started. An item to pay for the start of inspection is to be presented.

More Demand for Bounties.—The figures of the State Game Commission show the demand for bounties for skins of foxes, minks, weasels and other animals was not as heavy as expected last year, but that there has been a big demand for the pelts lately. The mild weather has enabled many boys to get after the pests and it is believed the total for this year will exceed that of 1920.

Closing Institutes.—Plans are being made for closing of the county institutes and the attendance is declared to have been better than anticipated. No regrets have been expressed at the changes in schedules or meetings, but the attendance at one day meetings has in some cases been better than the old two-day stand.—Hamilton, Harrisburg.

NEW YORK LETTER

For Slain Cattle.—In the deficiency bill for 1920 one item will be appreciated by farmers, if paid. This item calls for \$245,276 to reimburse owners of cattle found infected with tuberculosis, and which have been slaughtered to prevent spread of the disease. State agencies and organizations are pushing tuberculosis eradication, which can never succeed except as farmers are reimbursed for these losses. For the first time in years the price allowed by the state is reasonably close to the market value of the ordinary grade cow, and thus conditions are more favorable to developing the accredited herd.

Fertilizer Prices.—Farmers are urged to mix their own fertilizers this year, due to high prices on ready mixed stocks. New York farmers are doing this more than ever before. There has been a drop in fertilizers, but agriculturists consider prices still too high. It is believed that European agencies will bring a further drop in potash, which is now \$62.50 a ton. Nitrate of soda is \$55, sulphate of ammonia, \$58; rock phosphate \$4, and acid phosphate in bulk, \$14.

Farm Bureaus Celebrate.—The tenth birthday of the Farm Bureau will be celebrated in New York on March 20 and 21, at Binghamton where the first farm bureau was created. Prof. J. H. Barron, now of the state college, and known to farmers as the expert who selects their improved seeds in the northwest, was the head of the first farm bureau, as county agent. In the ten years the membership has grown to over a million, and every state in the Union but two now has this most powerful organization working for its farmers. Officials of the state and national federations will help to commemorate the event.

Wonderful Ice Season.—Plenty of men and plenty of best quality ice, also good clear weather has made the ice harvest a noteworthy one. No ice has been cut on the Hudson as yet or on the Susquehanna.

NEW JERSEY NEWS

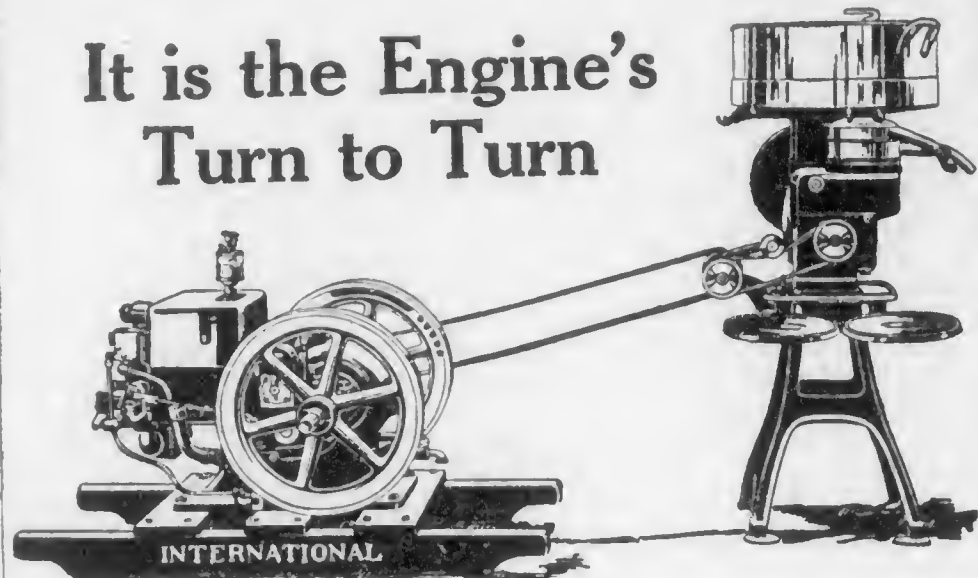
Moth Campaign.—Operations tending to the eradication of the gipsy moth in New Jersey are now under way, and with the appropriation of several hundred thousand dollars by the state under a bill of the present session of the Legislature, very active work will result. There were three infestations in Morris County and the state is sending in a large power sprayer to use on some of the infested orchards in that section.

Roads Convention.—Trenton is to have the biggest road convention in its history, and for that matter, the most important in New Jersey, on Feb. 23, 24, 25 and 26. Addresses are to be delivered at the meetings by such men as W. D. Uhler, State Highway Engineer of Pennsylvania; H. S. Mattimore, testing engineer of the Pennsylvania State Highway Department; Charles M. Upham, State Highway Engineer of Delaware, and F. H. Colburn, State Highway Engineer of Massachusetts. The convention will be conducted under the direction of the New Jersey State Highway Commission. Thomas J. Waser, New Jersey State Highway Engineer, will take the leading part in the holding of the meetings.

Farmers Advertise.—Plans for co-operative selling of potatoes by raisers in Central New Jersey were made at a big meeting held at the Mercer County Court House at Trenton last Saturday under the direction of the Farmers' Co-operative Association of the county. The purpose of the gathering, which was attended by agriculturists from many points, was to sell the potato crops in Mercer and other counties in this part of the state.

Legislature Meeting.—The Eldridge Daylight Saving bill, which advances the clock one hour from the last Sunday in April to the last Sunday in September, was given a hearing last week by the House Judiciary Committee in the Assembly Chamber at the State House with many opponents present from the farming sections.—Kelly, Trenton.

It is the Engine's Turn to Turn



EVERY dairy farmer who handles a large volume of milk knows that turning the easiest running cream separator in the world by hand gets to be monotonous work before the day's run is finished.

The **Primrose Direct Power Drive** has simplified greatly the matter of separation on a considerable scale. This practical little addition to Primrose efficiency can be attached to any hand-operated **Primrose Cream Separator** and does not interfere in any way with hand turning of the separator.

By means of this simple attachment, direct connection can be secured with an engine without speed-reducing gear, to a line shaft or portable electric motor.

If your milk volume has reached such proportions as to make separating a real task, then it is most certainly the engine's turn to turn. A **1½ h.p. International Kerosene Engine** and **direct-power-drive Primrose** will shoulder the job and handle it efficiently.

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For which I will pay \$1.40 straight. Late caught rats. No bunch too large—no bunch too small. Send at once to the old reliable. Kits at value. **W. I. JONES, Kimbolton, Ohio**



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Ship to The Old Reliable House DANIEL McCAFFEY'S SONS 625-25 Wabash Bldg., Pittsburgh, Pa.

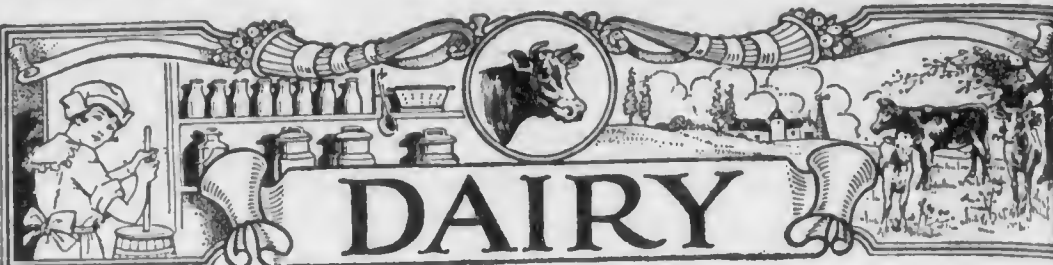
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THE PROPOSED MILK LAW

In reference to the proposed milk law will say that for the last eight years or the last four sessions of the Legislature similar bills were introduced and always defeated and mainly thru country members of the Legislature, however in my opinion the proposed milk bill seems to be the most impractical one ever introduced.

This bill would be very detrimental to the small milkman and dairy farmers and be a great hardship to the consumers, the latter would probably suffer more than anyone else as it would undoubtedly greatly increase the price of milk without benefiting any one with the exception of the large milk distributing concerns and pasteurization plants who I always found were the main promoters of such legislation, their main object being to control the price of milk and keep farmers and milk peddlers out of the market. The facts are that the farmer, dairymen, and milk peddlers are not lobbyists and generally do not know it happened till it is done.

If this bill is passed and enforced it will compel the bulk of the milk to be pasteurized and the facts are that pasteurized milk is dead milk and not near as valuable or as good as raw milk and all the hospitals, tuberculosis sanitariums and state institutions are using raw milk, this I found out while inspecting these institutions as a member of the Appropriation Committee for the last two terms during which time I visited most of the institutions in the state and always made it a point to find out what kind of milk was used in each institution.

I also want to say that the idea that raw cow's milk carries diseases like typhoid, smallpox, diphtheria, etc., is erroneous and not true as cows do not have those diseases. It is also generally known that bovine tuberculosis is not human tuberculosis and I never had any proof that human beings died of bovine tuberculosis.

Another erroneous idea that they are trying to impress upon the consumers is that farmers and dairymen are dirty which is not true as the facts are that they are the cleanest and most particular people in the state and if the weak invalids and infants were fed more of their raw milk the death rate and sickness in the state would be greatly decreased.

Some years ago Dr. Dixon made an inspection tour thruout the state and after the inspectors had gone thru our township at least half of the dairymen came to me and wanted to sell out but after I explained to them that there was no law to compel them to make sun parlors of their stables they decided to keep on and if this bill as proposed is passed and enforced I have no doubt that that one-half of the dairymen and small milk dealers will go out of business as they cannot stand such drastic legislation and make a living.

The State Health and Live Stock Sanitary Boards have ample laws now to prevent the sale of unhealthy and undesirable milk.

The proposed milk law would probably work the greatest hardship on the school directors of the various townships as I find the school

directors in our county for the last few years have enough trouble in enforcing the compulsory school law without adding other duties for which they receive no pay.—**W. M. Benninger, Northampton Co., Pa.**

COURAGE OF LEAGUE MEMBERS

The members of the Dairymen's League have just received notice that the price of milk has been fixed by the League officials and a committee from the Conference Board for the month of February at \$2.53 a hundred for three per cent milk. This is the lowest price in many years, and at present writing we are not sure that the dealers will sign up at even that low figure, although the probabilities are that they will accept, as the committee of the board has recommended that they do so.

In spite of this low figure which really is way below cost, the rank and file of our dairy farmers are hopeful and filled with courage; for they see the time fast coming when they will be in a position to control their own business. The lower milk goes the faster the farmers send in their contracts signed up for the new pooling system. There are those that believe some such thing was needed to hurry the men up about doing this. For a while they hesitated, fearing all sorts of things, most of which had no basis of truth, one being that if they signed the contract if things did not for a time go right the League might take their farms or anything they had to the last cent. It has been a part of the propaganda of the big companies to pester the farmers with the most foolish and absurd arguments possible in the effort to keep them from adopting the pooling system and so breaking down the League. But they are not going to win. The rank and file of the farmers are standing together firmly and declaring now that they will see the fight thru if it takes all summer. They will do it, too.

The League is bringing its offices to Ithaca, N. Y., right up to the doors of the great central New York milk producing section. That will make it easier for delegates to reach the meetings that are held and in some ways prove an advantage.—**E. L. V.**

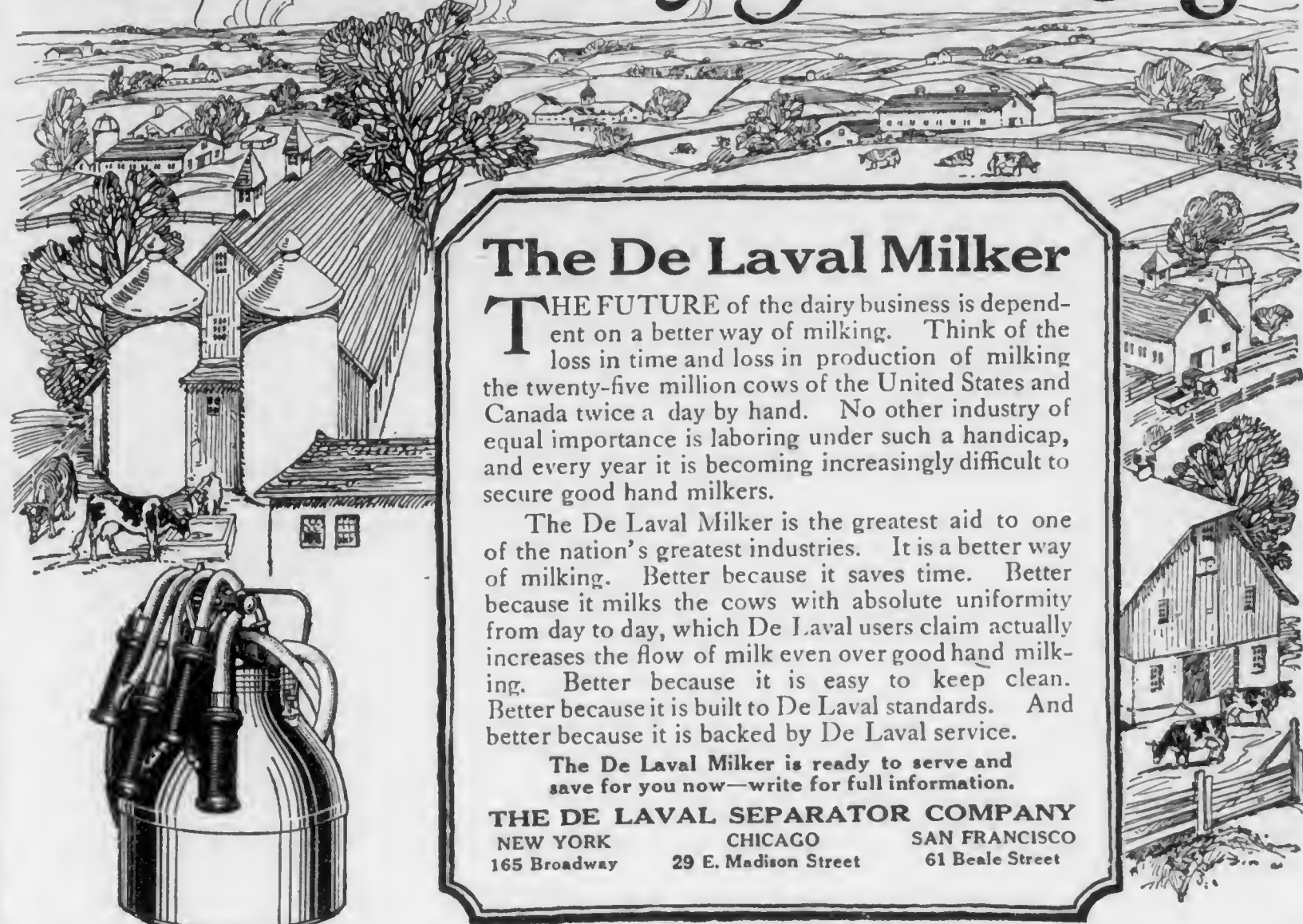
LEAGUE PRICE FOR FEBRUARY MILK

The producers' price for milk in Dairymen's League territory during February will be \$2.53 per hundred pounds for milk testing three per cent butterfat, at the 200-210 milk freight zone, with the usual freight and butterfat differentials. This is a reduction of sixty cents a hundred-weight from the January price, or about one and one-quarter cents a quart.

The reduction in price is due to a surplus of milk caused chiefly by the continued refusal of the manufacturers to buy milk for manufacturing purposes. The milk market situation is bad. Manufacturing plants are still shut against the farmers. Many farmers are facing financial disaster because of their inability to market their milk for anywhere near what it is worth.

There is every evidence now, however, that farmers are about to go

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The De Laval Milker is the greatest aid to one of the nation's greatest industries. It is a better way of milking. Better because it saves time. Better because it milks the cows with absolute uniformity from day to day, which De Laval users claim actually increases the flow of milk even over good hand milking. Better because it is easy to keep clean. Better because it is built to De Laval standards. And better because it is backed by De Laval service.

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This sprayer is sturdy; tank is made of heavy brass or galvanized iron; capacity 4 gallons. Pump is two inches in diameter, seamless brass; brass castings; nothing to rust, corrode or wear out. A few strokes and you have a strong pressure to deliver long-distance fine mist or coarse spray through the Automatic, Brass, Non-cloggable Nozzle. Does not waste liquids. Easily operated by man, woman or boy.

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No matter what conditions prevail, a good crop means bigger cash returns than a poor one. Especially under present conditions GRO-ALL Fertilizers are an economy—they will fill the far-sighted farmers' barns with money crops.

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GRO-ALL for 1921 Spring's work now.

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Spray Pumps for All Uses

THERE are spray pumps suited to every need of the farmer, but it cannot be said that there is any one pump that fills every need. The type that fills the bill for the small orchard is hardly suited to the commercial fruit farm and the apparatus that is suited to the modest requirements of the home garden will not do for the large potato grower.

First are the small machines, or atomizers, holding a quart or two of liquid and suitable for spraying house plants and small garden work. Next in size come the automatic and knapsack sprayers. Knapsack sprayers will answer the purpose for gardens and small areas. This type of sprayer is not, however, used so much as the automatic. The knapsack is carried on the back, one hand keeps the pump constantly working while the other directs the nozzle. The automatic consists of a tank carried over the shoulder. This actually pumps air and the spray is delivered by air pressure. Fill the tank about two-thirds full, then put on the lid and clamp it down. Work the pump until a good pressure is obtained, after which part of the liquid will be run out. Work the pump again and continue spraying until all the liquid is distributed. This type of sprayer has many uses about the farm and garden. A considerable amount of work can be accomplished.

For large acreage of potatoes a machine is required in which a continuous spray is given while the sprayer is being hauled along the rows. In this type of sprayer, the forward motion of the motive power furnishes the pumping strength. Such machines cannot be used for tree work, as the pump is connected with the wheels by chains, gears, or eccentric. The large potato grower usually includes this type of sprayer among his equipment.

We now come to the power sprayers. These are necessary for the orchardist with ten or more acres of apple trees. The largest orchardists have powerful machines capable of quick work and with tanks of considerable capacity.

One can decide if he needs a power sprayer by figuring the number of trees and how long it takes to spray each tree. Another way is to take into consideration the amount of spray material required for each tree and figure the number of trees. The farm and garden. A considerable amount of work can be accomplished.



A Motor-Power Cultivator

It will do for an acre of potatoes and a small home orchard of small trees may be successfully sprayed with it. It is also useful in the truck patch. It should be remembered in buying this type of machine that the galvanized iron tank will not withstand the action of Bordeaux mixture to any extent. The brass tank is more costly but probably will be found cheapest in the end.

There is another type of hand sprayer known as the bucket pump. It is useful in spraying a few small trees, or for work about the hen house and stable. It is not convenient for extensive work, altho its work is done in the same way as that of the barrel sprayer is done. The barrel sprayer will answer for a small orchard, say up to four or five acres. These are hand-operated, requiring the work of a good husky man at the pump handle and others, like the double-acting horizontal pump, being easy of operation. In the latter type of machine the man keeps constantly at work but it is not the back-breaking work required to keep the common barrel type delivering the goods. The best of these expensive method is to place one-half of an old barrel, a box with the bottom and top removed, or a small cold-tail. This kind of pump mounted on a one-horse wagon with tower for one man, while the other works from the ground.

EARLY GARDEN RHUBARB

Rhubarb can be had in the garden a week to ten days earlier than ordinarily, if provisions are made for protecting a few of the plants from cold nights and bad weather. An interesting method is to place one-half of an old barrel, a box with the bottom and top removed, or a small cold-tail. This kind of pump mounted on a one-horse wagon with tower for one man, while the other works from the ground.



Open the Winter Road to Town— Haul on Pneumatics

"The big Goodyear Cord Tires on my one-ton truck carried the supplies for my new home over roads that would prove impassable to less active and less powerful traction. Many a time the wheels were buried to the hubs, yet these sturdy pneumatics always pulled through. Without costing me a cent for repairs, and at a saving of at least 33 1/3% in gasoline and oil, they brought from Bentley, four miles away, 15,000 lbs. of iron, two carloads of brick, five tons of cement, 65 tons of sand, and 35,000 feet of lumber. Between times, they hauled five loads of hogs to market, returning with full loads of supplies. I hauled a carload of corn when I would have been overhauling the truck if I had tried to do all this without the air-cushioning support of pneumatics."—Arthur S. Witt, Farmer, Neola, Iowa

BOTH the work that Goodyear Cord Tires do, and the advantages they exhibit in mastering the severest conditions of farm hauling, are best described in such testimony as that furnished above.

The tractive power, the cushioning resilience, and the greater activity combined in the big pneumatics by their Goodyear Cord construction give the farmer a command

of the road in all sorts of weather, protect his truck and product, and make possible many an extra profitable trip.

The actual experiences of farmers the country over with motorization and pneumatics will be furnished to anyone interested on letter request to The Goodyear Tire & Rubber Company, Akron, Ohio, or Los Angeles, California.

GOODYEAR CORD TIRES

There Are Certain Conditions under which

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SCALE OIL is far superior to Lime Sulphur in some ways—especially for

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Killing Aphid Eggs ^{IN} WINTER
For Old Rough Trees
For Pear Psylla

Scale Oil Cleans up the Trees

We make a full line of Spraying chemicals—Lime Sulphur, Hydroxide, Lead Arsenate, Calcium Arsenate, Dusting Mixtures, Sulphur (all kinds).

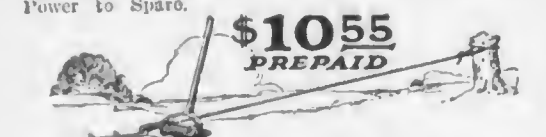
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If your dealer does not carry our line write us direct.

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YOU CAN do it all alone with the Amor Hoist Pull Hoist. A boy can stretch a quarter mile of four-foot fence, pull small stumps, clear hedgerows and brush or rocks and move small buildings easily. Pulls your implements or automobile out of the mud. Power to Spare.



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Powerful—Compact—Strong. Weighs 28 pounds, equipped with 12-foot steel cable, derrick with ratchet, all steel and strong three-foot telescopic, long sweep lever. All exposed parts enamel or painted. 24V55 complete, all ready to go to work. Limited time offer includes all shipping charges. Shipped direct to your nearest express office. Send shipping instructions with check or money order.

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Write today for this free book—a wonderful guide to better gardens. 300,000 Isbell customers buy from this book. It will pay you, too. A postcard will do.
S. M. Isbell & Co., 392 Mechanic St., Jackson, Mich.

GOOD SEEDS

Grown From Select Stock—None Better—50 years selling seeds. Prices below all others. Buy and test. If not O.K. return and I will refund. Extra packets sent free in all orders I fill. Send address for Big Catalogue illustrated with over 700 pictures of vegetables and flowers of every variety.
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Tupper Lake, (Hess County) Ohio

How About Your Seed Potatoes?

"WHERE can I get seed potatoes that are practically free from transmissible diseases?" This is a question heard many, many times at the season of the year when potato growers are buying their seed stock. It is rather difficult to reply to the question because there are so few places where real disease free potatoes can be purchased.

In the past, potato growers have been satisfied to buy what is known as certified seed. To be certified, the seed must come from fields that show not more than 15 per cent of transmissible diseases at the first inspection and not more than 10 per cent at the second inspection. Such rules for seed certification are good, but they are not good enough for up-to-date potato growers who are demanding better seed each year, nor for the seed growers who keep the lead in putting clean seed on the market by recognizing the conditions and planning accordingly.

As an illustration, let us assume that a grower has purchased certified seed that shows only 10 per cent of transmissible diseases. If he buys 300 bushels of seed (enough to plant 20 acres), 10 per cent of the plants producing these 300 bushels are diseased, and basing an assertion on the field results that show diseased plants to yield not more than half as much as healthy plants, there would be from 12 to 15 bushels of diseased

The insect pests that destroy the vitality of the potato plants are the Colorado potato beetle and the flea beetle and these pests are satisfactorily controlled by spraying. The Colorado potato beetle may easily be controlled by an application of three pounds of arsenate of lead paste or 14 pounds of powder (or some other equally good poison mixture) to each 50 gallons of spray material. One or two applications of poison are usually all that are necessary to control the potato beetle. The flea beetle is controlled by an application of Bordeaux mixture. The Bordeaux acts as a deterrent to the insect, so that very little damage is ever done by the flea beetle where the vines are kept sprayed with Bordeaux.

Among the seed-borne diseases are the various forms of scab, the most commonly known being the common scab and Rhizoctonia scab, Fusarium wilt, leaf roll and Mosaic. Potatoes may be grown free from some of these diseases by treating the seed at planting time with formaldehyde or corrosive sublimate solution. Fusarium wilt can be readily detected by clipping a thin slice from the stem end of the tuber, for the black ring discoloration in the vascular bundles is an indication of Fusarium wilt. Leaf roll and Mosaic can be detected in the field during the growing season and the diseased plants can be eliminated very easily at that time. It naturally follows therefore that careful seed treatment before planting, examination of the seed pieces when cutting for planting, and careful inspection and roguing during the growing season by anyone familiar with foliage diseases will eliminate almost entirely the seed-borne diseases that have been causing a high percentage of loss in the potato crop.

The leaf diseases belonging to class two, are the late blight, early blight, and tip burn and can be absolutely controlled by spraying the vines consistently during the growing season, at intervals of a week or two weeks, depending upon the weather conditions. The most effective solution has been home-made Bordeaux mixture, using the 4-4-50 formula. When spraying is done, it is essential to bear in mind that the vines must be sprayed so that the under sides of the leaves are completely covered with the spray as well as the upper surface because disease infections (late blight particularly) take place on the under side of the leaf. The machine used for spraying must be so constructed that it will maintain a high pressure of from 150 to 200 pounds per square inch, this pressure being necessary for best results. Two or three nozzles to the tow have been giving good results but depend upon the way the nozzles are distributed on the spray boom at the back of the machine.

Seed certification is very necessary and is one way of making it possible for the potato grower to get seed that is fairly satisfactory. However, certified seed may not necessarily be disease-free seed. With our present knowledge of potato diseases and their control there is no reason why we should not have seed potatoes that are disease-free, or as nearly disease-free as it is humanly possible to produce them. The time is surely coming, and in some sections I believe has arrived, where it will be possible to buy practically disease-



Showing Normal Plant and Leaf Roll Plant

tubers in the purchase or enough to plant an acre of ground. Considering the yield from an acre of healthy plants as 200 bushels, the return from 12 or 15 bushels of diseased tubers would not be more than 100 bushels, or a loss to the grower of 100 bushels on account of the diseased seed. Had the 10 per cent of diseased plants been removed by the seed grower during the growing season he would have sold 15 bushels less for seed purposes but the 15 bushels could have been marketed locally and need not have been marketed up as a loss and the grower would have established a reputation as a grower of clean seed, while the man who planted the seed would have marketed a crop of 100 bushels more and he would have been a better satisfied customer.

Certain factors must be kept constantly in mind with reference to the production of clean seed. The most important are, insect injuries and certain diseases that affect the potato. These diseases are divided into two classes: seed-borne, and diseases that are leaf-borne.

(Continued on Page 29).



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You can't afford to waste valuable time, good materials and money by having to do over again concrete work which was mixed by shovel. Get a Sheldon Farm Concrete Mixer and put in your own concrete so it will last a lifetime—it will save its price on the first job. What is more, you can do the work when you please in otherwise idle time. No big gang of men needed.

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Apple & Peach Trees 25c each postpaid. Write for 1921 wholesale catalog of fruit trees, vines and plants.
ALLEN'S NURSERIES. GENEVA, OHIO

WAS CONSOLIDATION TO BLAME? CLIPPING AND A CARD INDEX

E. A. W.'s article, "Against Consolidation" was no argument against consolidation, necessarily, but more against its local administration. She admitted that last year the wagon came to her door. Personally, if I were victimized by the local officials in the way she is this year I would refuse to send my children to school, and any reasonable court would uphold her, and compel the officials to administer the affair with equal justice to all, or as nearly so as would be reasonable.

And do the children need to rise at 5.30 A. M. to be at the starting place at 7.30 in order to reach a school only three miles away at 9 A. M. or even at 8.45—which is the earliest hour of opening a school I know of?

They could walk the whole distance in less time than that. Let us be fair and reasonable, even in a matter of schools.

E. A. W. says nothing of the better conditions at the consolidated school, over the usual district school. We have lost sight of the value of education for its own sake and the right of a country child to the best educational opportunities. Blessings on E. A. W.'s three little men—and the way she continues to feel for

"Mary do you remember where I put that paper with the directions for making a self-feeder for hogs?"
"No, John, what paper was it in?"
"It was in the Pennsylvania Farmer."
"I told you to save it."
"All your Pennsylvania Farmers are in the pile of papers on top the bookcase."

If you, Gentle Reader, have ever been in John's predicament you will appreciate what a task he had finding that article.

Resolve now: "Never again!"

Provide yourself with a heavy blue pencil, or red if you prefer, and a card index case with a goodly supply of blank cards. Also a bottle of good paste and a—well I was going to say shears but maybe you can borrow a pair from your wife so you can save that much.

Sharpen that pencil, then after you have put on your favorite slippers and settled back in the easy chair with your copy of the Pennsylvania Farmer, left in the R. F. D. box this morn, as you read mark, plainly, all articles and there will be many, that you want to save for future reference.

You may postpone the clipping until later, after Mrs. Gentle Reader



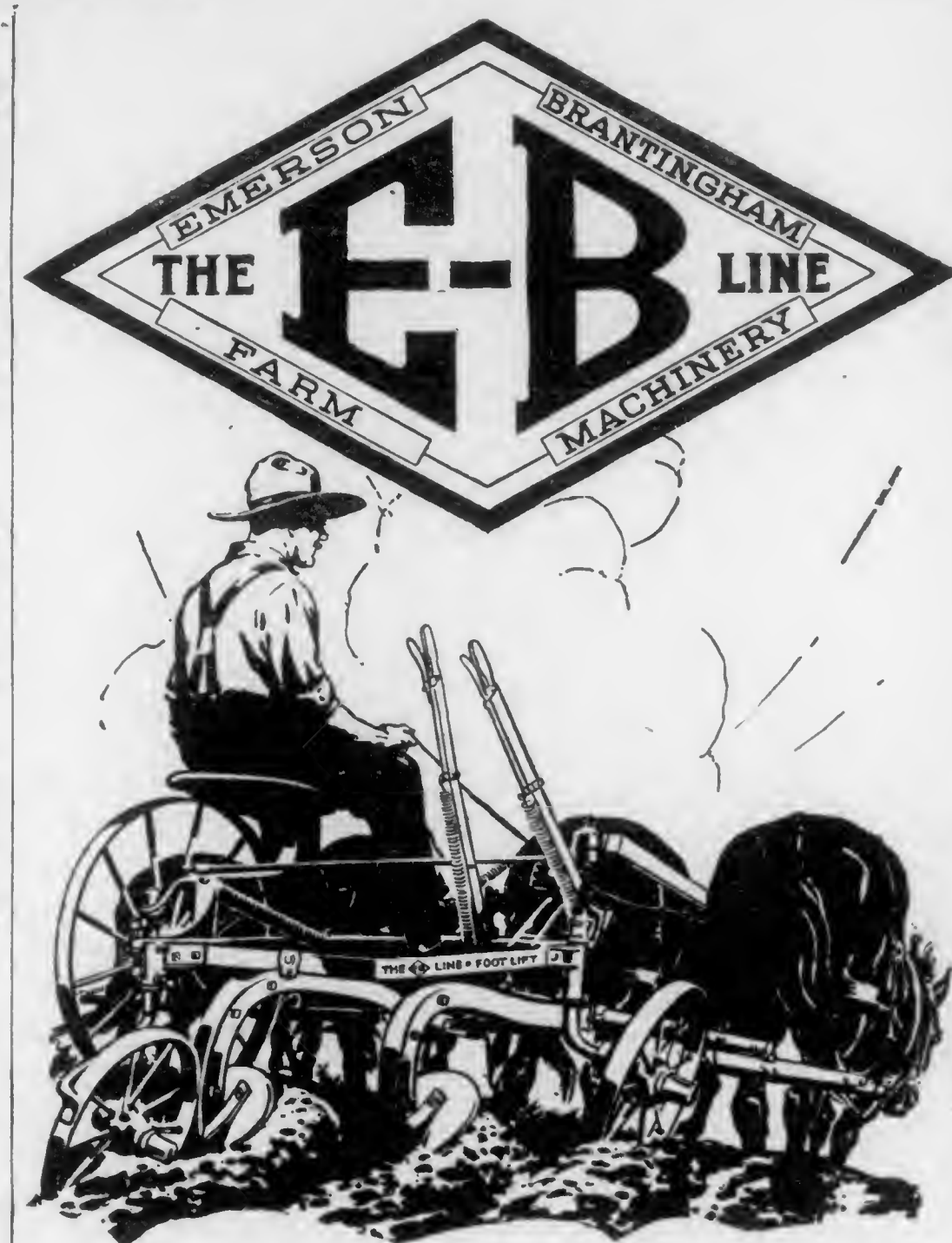
Farm of B. H. Waite, Huntingdon County, Pa.

them. Some day they will appreciate what she is doing for them and will be a joy to her, if they can be made into broad-minded, educated citizens. Only do not get embittered by a little local injustice, but let her see to it that the very evident injustice is remedied. She seems to be the victim of the township system, which New York turned down a year ago, but which still has valuable features if rightly administered. Its weak features, like this one, can be and should be corrected. She admits the equality of taxes in her town. Without the township system one tax rate may be 16 mills and another 64 mills—an obvious miscarriage of justice as is true in this state now.

E. A. W. says the child farthest from school should have equal chances with those nearest. Right, and under either contracting or consolidation he can have it, as the wagon is movable and can go to each home. Can the district school house be moved from door to door or so located that it will be as near to one home as to another?

Let us exercise a spirit of farmers' and common sense—"Reader," New York.

Enthusiasm to a salesman is like gasoline to an automobile



Some Farm Hands Do the Work of Two—So Do Some Farm Tools

Once in a while you hire a man who's worth two or three ordinary men to you. If you've got that kind of a man this spring, hold on to him.

Farm implements perform in the same way. Two machines of different makes may cost about the same. But one fails you in an emergency, and the other performs beyond what you expect—does the work of two.

The E-B Line of farm machinery has proved its reliability during its 69 years of service. The experience of farmers everywhere backs up this reputation—whether with E-B horse-drawn or power-driven tools. The E-B dealer will give you reliable help in buying the right equipment for your needs. Then he'll give you the service that will keep that equipment in use 365 days in the year if necessary.

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Established 1852 Rockford, Illinois
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A Complete Line of Farm Machinery Manufactured and Guaranteed by One Company

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Animal Base Fertilizer and Lime
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Robert A. Reichard, Dept. P. Allentown, Pa.

TWO PAIR Mulehide Only Gauntlets 98c



Send No Money

Don't send a penny. Just send your name and address and we will send you the greatest bargain in work gauntlets ever offered. Just think of it! Genuine mulehide gauntlets for less than the price of a pair of gloves. Although of profit has been forgotten. Order today—you'll not find another bargain like this in years.

Send Coupon! Don't send a penny, just mail it now—IMMEDIATELY, while this offer lasts.

Starr & Starr 310 W. Van Buren Street Dept. 4812, Chicago, Ill.

Send me two pair genuine mulehide gauntlets, extra fine quality, ripproof seams, which formerly sold for \$1.25 each. When they come I will pay the postage 8c and postage. If I am not absolutely satisfied I will return the gauntlets and you will refund my money immediately. I risk nothing.

Name.....

Address.....

U.S. ARMY SHIRTS \$2.00



These class B O. D. Wool Army Shirts,

a part of our \$1,000,000 Shirt Purchase from the Government are sold under our well-known policy of "Satisfaction guaranteed or money back."

They are clean and sanitary, and have been repaired wherever necessary. Had the War continued they would have been issued to the American Troops. Have double elbows and pockets—double stitched throughout—shoulders reinforced. These shirts were made under Government Supervision. They may be had in sizes from 14 to 16. Weight 1 pound.

Free Catalog of Army and Navy Bargains. Everything guaranteed—satisfaction or money back.

ARMY AND NAVY SUPPLY CO. Department K Richmond, Va.

Extraordinary Offer

Corduroy Pants

Were made to sell for \$6.00; Special at

\$2.50

These Pants are made from fine quality narrow waist velvet dark corduroy. Cuff buttons, label pockets. A new pair from if they rip or split. Sizes 30 to 41.

Money refunded if not satisfied. 10c extra for postage.

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HAY W. O. POWER & CO., 601 W. 33 St., New York are the largest handlers of commission hay in greater New York; if you have hay to dispose of commission with them.

TALKS WITH THE BOYS

EDITOR'S LETTER

To the Boys:

I wish I were able to impress all boys with the fact that one of the big lessons of life is to learn to bear disappointment. I well remember that I thought when I was a boy that when I got to be a man I would be so independent that I could always have things as I wanted them and would not be heart-broken by disappointment so often. But I have not found it so. We never reach a point where we can always have things as we wish them. And it is a good thing, no doubt, that it is so. Long ago I learned a line of poetry which helped me greatly. It is: "Sometimes the thing our life misses, Helps more than the things which it gets."

Of course, we cannot see it that way at the time, but it makes us strong to choke back tears of anger at disappointment and try to bear our trials bravely.

One of the greatest of my boyhood disappointments occurred in this way: When I was about 13 years old I got enough money together to buy a setting of pure bred Plymouth Rock eggs. From these I raised ten fine chickens. Oh! how proud I was of them. I spent a great deal of time caring for them and built what I thought was a fine pen. No chickens ever had better attention. I shut them in every night, for mother had cautioned me never to forget that. But one night I did forget. When I went out to the pen in the morning I found that a weasel had killed all but one. I was all broken up. I have never since had a loss that hit me like that. And the worst of it was, I knew it was caused by that which causes most of our disappointments—my own carelessness or neglect.

Of course, I got over it quickly. That is one good thing about youthful disappointments—they soon disappear. But it was a dearly bought lesson not to forget. Boys, don't get the habit of saying, "I forgot."

Unless people learn to bear disappointment they become sour, crabbed and ill-natured. It is well early in life to adopt the motto, "If at first you don't succeed, try, try again." But sometimes it is better to give it up finally and try something else. There used to be an old popular song that had these lines in it:

"When things don't go to suit you,
And the world seems upside down;
Don't waste your time in fretting,
But drive away that frown.
Since life is oft perplexing,
It's much the wisest plan
To bear all trials bravely,
And smile when e'er you can."

Sincerely,
The Editor

LETTERS FROM THE BOYS

Dear Editor—I saw some letters written by boys published in the Pennsylvania Farmer and thought I would try to write one. My grandpa has taken the paper for a long time.

I am thirteen years old and am in seventh and eighth grade at school. I have missed only a few days of school this winter. I live in Wilnot township on a dairy farm of 251 acres and we have ten cows and three

horses. I like to trap and hunt. Last year I trapped and got two skunks—my brother got three. There are lots of fur-bearing animals in our country. We go to the creamery about five miles from our home. Last year I cultivated most of our corn and we had lots of fun filling our silo.—Glenwood N. Franklin, Bradford Co., Pa.

Dear Editor—Mother was reading to me some of the letters and articles of the Boy's Page of the Pennsylvania Farmer so I told Mother I was going to write to you.

I am thirteen years old and am in the sixth grade in a country school. Dad would like to farm, but does not own one. He works by the month and Mother tells him that if he would rent or work on shares he would make more money. There are five in our family with Dad and Mother.

Please answer this and tell me what is your opinion of it.—John Swartwood, Bradford Co., Pa.

Dear Editor—I have read in the Pennsylvania Farmer that you are having a page for the boys and am



Cecil Small, Millbrook Club Winner 2nd Prize 1919, \$25

very glad that the boys are to enjoy such a sport.

I am eleven years old and the only child of our family. I am in the Fourth Reader and have five other books. I have raised two hogs and a calf which I enjoyed very much. One of the pigs was given me by my Grandpa and after feeding it for about a year, I sold it for a good deal of money. It weighed 312 lbs. and was black in color. The other pig I bought from my Grandpa for 50 cents and fed it about six months and sold it the other week. It weighed 150 pounds. The calf I raised, sold for \$40. I have now a great deal of experience in raising stock.

My father has all my money in the bank and it is drawing interest which amounts to a good deal. I hope your page will be a great success.—Earl C. Deckard, Perry Co., Pa.

Dear Editor—I saw some letters in the Pennsylvania Farmer written by the boys, so I thought that I would write one too.

I live on a farm of 130 acres, but we farm only 100 acres cleared—the other 30 acres are woodland and pasture land. I have an older brother who went to school at Susquehanna for one year. He also helps on the farm.

In 1918 my father gave me a calf in the movies.

to raise and I sold it for \$50, with which I bought a Liberty Bond. I am 13 years old and have a mile to go to school. I am in the eighth grade and like my teacher very well.—John C. Gates, Huntingdon Co., Pa.

Dear Editor—My father is a subscriber of the Pennsylvania Farmer and I saw that you have a Boys' Page and thought I would write you a letter.

We live in the country and father owns a span of sorrel mules and a pair of big gray horses. I ride them to water and I drive the horses in the wagon to help father haul in corn in the fall. We had about 18 or 19 young pigs and father sold them all except one which he gave to me. I go to school which is about one mile away from my home and walk the whole way. I missed only two days. I like my teacher very much. I have a little brother who is not quite two years old.—J. Leroy Shult, Perry Co., Pa.

NEW JERSEY BOYS WIN CUP

By winning the eastern intercollegiate fruit-judging championship at Morgantown, West Va., January 20, the fruit judging team of the New Jersey State Agricultural College at New Brunswick now have permanent possession of the large silver trophy. The cup was offered first in January,

1915, by the West Virginia Horticultural Society to be awarded to the college first winning three contests.

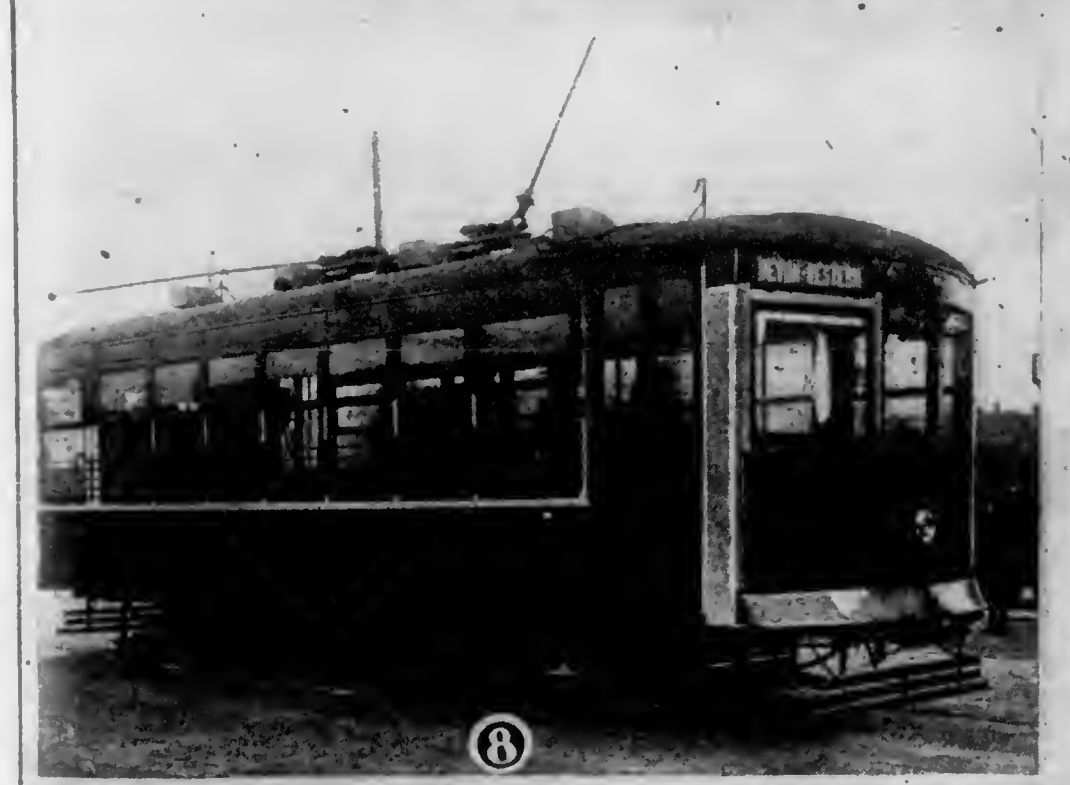
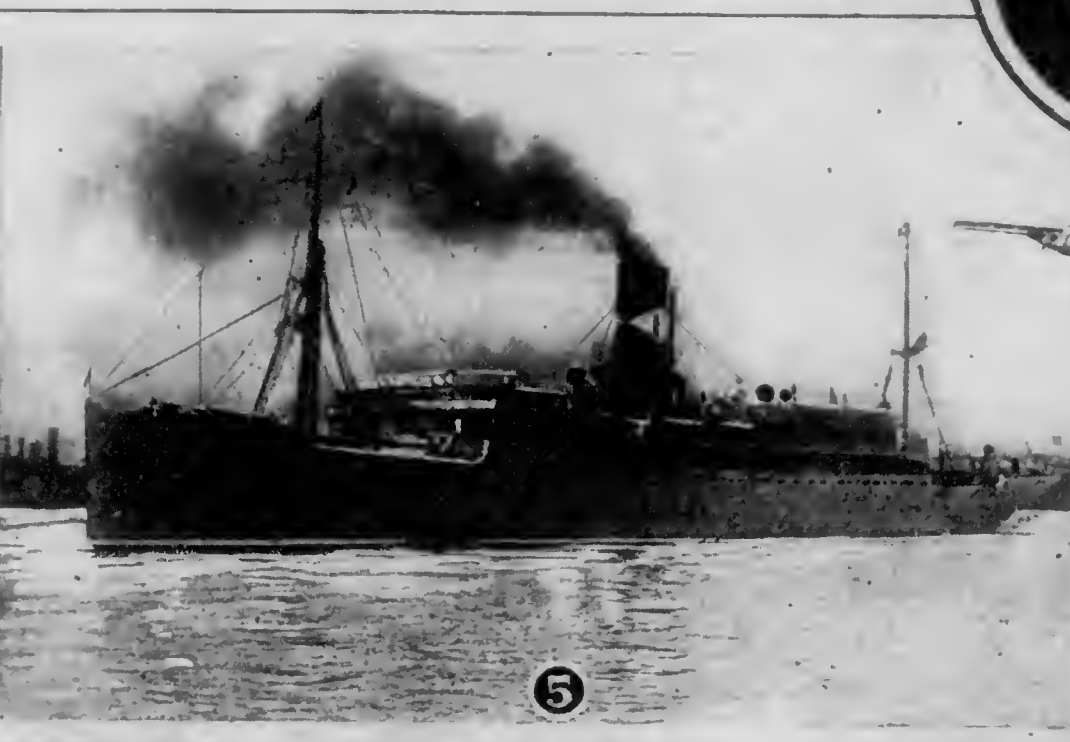
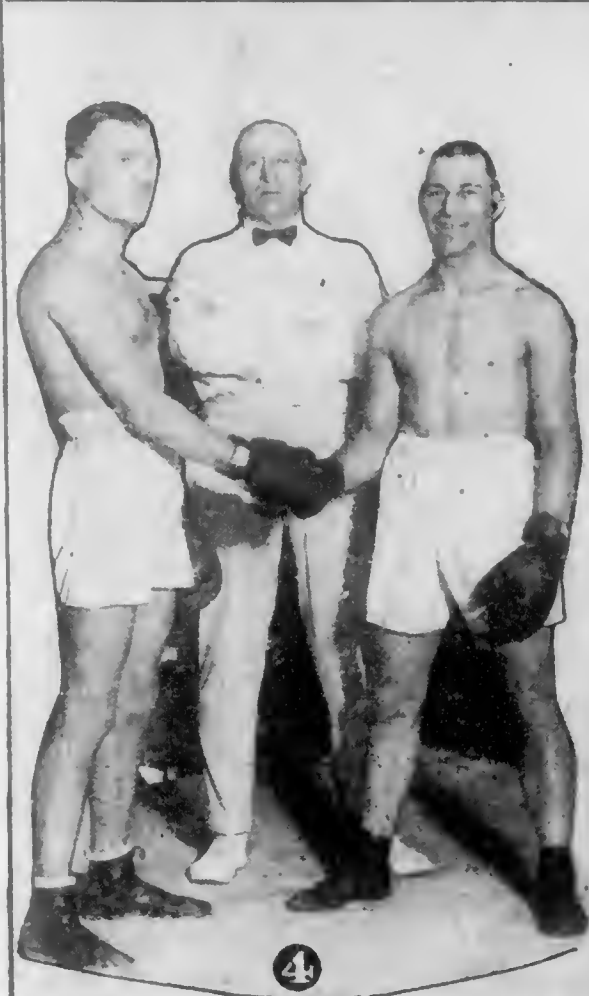
The percentage of the winning team was 91.33, West Virginia was second with 88.3, Ohio State University third with 86.03, Penn State fourth with 85.6, and Maryland University fifth with 80.14.

The New Jersey team was composed of Ernest V. Close, Lawrenceville, Pa.; Robert E. Crane, of Montclair, N. J., and Charles A. Doehliert, of Rutherford, N. J. Highest individual honors in the contest were won by Ernest V. Close, of the New Jersey team with a score of 92.5. That the team was uniformly strong is shown by the fact that all three men had scores over 90.

"The best and most hopeful feature in any people is undoubtedly the instinct that leads them to the country to take root there, and not that which sends them flocking to the town with its distractions. The lighter the snow, the more it drifts; and the more frivolous the people, the more they are blown, by one wind or another into towns and cities."—John Burroughs.

Children are seen and not heard—

PASSING EVENTS IN PICTURES



1—New Justices sit in Supreme Court. Left to right: Sylvester B. Sadler, Chief Justice Robert Von Maschizsker (said to be the youngest Supreme Court Judge), and William L. Schoffer.

2—Which Goose will win? The Goose Race was a novel feature of the Poultry Show at Madison Square Garden, New York.

3—The Motor Sled, propelled by a Ford Motor, can do 30 miles an hour.

4—Benny Leonard with Ritchie Mitchell, whom he recently defeated at Madison Square, retaining his title as Lightweight Champion.

5—United Fruit liner "Pastores" which will bring President-elect Harding home from Panama.

6—Miss Adelia M. Stewart, first woman to be

appointed a National Bank Examiner.

7—Lida Liners, 14 years old, shooting left-handed after an injury to her right eye.

8—The One-man Car used in Chicago is said to be the last word in Safety and balks like a mule when anything is wrong.

9—Home purchased by President Wilson; contains eighteen rooms and worth more than \$100,000.

(Photo. Copyright by Underwood & Underwood.) No. 4—(Western Newspaper Union).



Of Interest to Farm Women and Girls

How Much Are We Worth?

(The following instructive article is by Dr. Benjamin Andrews, head of Teachers' College, Columbia University, which institution has sent out to all parts of our country many people who have been giving valuable aid to families in solving their financial and other problems. Dr. Andrews is pre-eminently practical in the household economics requirements made of his teachers and pupils, and he keenly appreciates that a financial accounting method for the average family must needs be very simple and require a minimum of time. You will be interested, we are sure, in his suggestions on this subject.—The Editors.)

By Benjamin R. Andrews, Teachers' College.

Taking an annual inventory of one's property and one's debts is a first step toward mental financial sanity when high retail prices continue to drive people to financial desperation. Taking such an inventory is a simple matter, which a man and his wife can carry out in an evening's financial conference, that will yield facts by which they can make intelligent financial plans for the year ahead.

Even if they keep no records of expenditures and receipts (and most American families have not yet discovered that such records can be kept in a simple form that pays for the trouble a dozen times over), it is possible to make the annual inventory of property and debts by writing down what they have and what they owe. Do you know how to properly estimate the value of all that you have? A simple schedule form is suggested herewith that will perhaps help you. It requires that you examine your bank balance and any other money on hand, and set a value on other property, such as government bonds, etc., real estate, livestock, feed for the stock and food for

your family, crops on hand, etc., farm furnishings, and thus get a total of your property. Then in a similar way, you jot down whatever outstanding debts there may be at stores or elsewhere, and such more or less permanent debts as mortgages, notes, etc., if there are any.

The total of the debts is then subtracted from the total of your property value, to get the worth of your property. This figure of net worth, or as the business man calls it, the net capital, is one of the goals sought by the most elaborate systems of bookkeeping. Yet the individual man or woman or householder can easily reach this figure regarding personal or family finance without keeping books.

The beauty of this simple device is that if one will take such an inventory at a given date each year, say about this time, which is a good time for a farmer's family because crops and stock are largely marketed by now, one can rather accurately look back to the conditions of a year ago and tell how much financial progress has been made during the year. By making such a memorandum now of your net worth at present you will have an interesting figure to check against a similar inventory figure to be taken next year at this time, and it will show you just how much you have saved during 1921. Keep these records in a book reserved for this purpose. You will find it an interesting and profitable experience.

A thick layer of newspapers between the springs and mattress of the outdoor bed will keep out cold.

If the pan for poached eggs is thoroughly oiled before the boiling water is poured into it, the eggs will not stick.

OUR FAMILY'S ANNUAL INVENTORY

	1921.	1922.	1923.
I—PROPERTY.			
Money (cash)	\$.....	\$.....	\$.....
Bonds, government, etc.
Other securities
Notes receivable
Stocks
Other assets
Farm equipment, machinery, vehicles, etc.
Tools, etc.
House equipment
Livestock
Feed for stock
Food for family
Crops for sale, seed
Miscellaneous
Real estate: Farm land, timber, buildings and repair material, any other real estate
Total Property	\$.....	\$.....	\$.....
II—DEBTS.			
Bills owed	\$.....	\$.....	\$.....
Notes payable
Mortgage
Total Debts	\$.....	\$.....	\$.....
III—NET WORTH.			
Total Property	\$.....	\$.....	\$.....
LESS
Total Debts	\$.....	\$.....	\$.....
NET WORTH	\$.....	\$.....	\$.....

ATTRACTIVE LOOKING FOOD

In my school teaching days I always felt sorry for the children whose mothers put up unattractive food. Children are keenly sensitive or inordinately proud, according as their mothers dress and provide for them. Common sense and the desire to make them happy and at ease away from home will make the children think they have the best parents in the world, but on the other hand parents can make their boys and girls perfectly miserable by the way they neglect to give attention to the little details that mean so much to children.

The other day I saw two lunches put up for a small box supper and the contrast between them can hardly be imagined. The one had dainty sandwiches wrapped in waxed paper, two cookies also wrapped in waxed paper, an egg shelled and sprinkled in salt, an orange with the peel loosened, six or eight nuts cracked and wrapped in paper, three or four pieces of home made fudge wrapped, a small pickle and a bit of cheese with a folded paper napkin over all in a perfectly clean shoe box. The other lunch had chicken, frosted cake, pickles, sandwiches and eggs, but nothing was wrapped, everything was crumbly, the box was soiled on the outside and the egg, which was not peeled, was dirty and cracked. The unattractive box had more food and probably it was of just as good quality, but one box was well arranged and the other looked as if the food had been thrown together.

But not only in lunches does it pay to have things nice, but day in and day out at the table. A young girl once helped me in an emergency and she invariably broke the pieces of pie in putting them on the plates, turned the pudding upside down instead of keeping the delicious looking brown crust on top, served the mashed potatoes in a soup plate or on a dinner plate, mixed the cracked jelly glasses with the drinking glasses for the table, fried the meat to a crust on one side and left it raw looking on the other, mashed the potatoes and left them lumpy and dry looking, had big potatoes, sun burned potatoes and little potatoes in the same dish when they were served in their skins and generally threw things together in the cooking line. "What's the difference?" she would say. "Things taste just the same no matter if they look good or not." But they do not taste the same no matter how they are cooked and served. Attractive looking things are more economical and healthful from every standpoint.

A mother who complained that her children would eat no breakfast was amazed to find that it was because she expected them to have their food on the same plates, without washing, that the older folks had used earlier in the morning. She complained bitterly that her children were snippy, when in reality she probably would have had no appetite if she had been compelled to eat off a mussy plate.

One of the marks of good housekeeping is the ability to prepare and serve attractive things for the home folks and for social occasions. Every woman knows who sends delicious, attractive foods to the church suppers and socials, and every woman knows who sends the other kind. It is the delight of every good cook's heart to hear her food praised, and it is too bad that some ladies will not set themselves definitely to the task of making even toast and coffee look so attractive that an invalid will relish them.—Hilda Richmond.

PENNSYLVANIA FARMER PATTERNS

Give figures and letters of each pattern exactly as printed at beginning of each description or we will not be responsible for correct fitting of orders. Give bust measure when ordering waist patterns, waist measure for skirt, and age for children's patterns. Address Pennsylvania Farmer, 261 S. Third Street, Philadelphia, Pa.

3455.—Comfortable Coat for Child. Pattern is cut in 5 sizes: 6, 8, 10, 12 and 14 years. A 10-year size will require 3½ yards of 44-inch material. Cheviot, tweed, serge, broadcloth, velveteen, corduroy, heather mixtures, velours, duvetyne and taffeta could be used for this type. Pattern, 10 cents.



3432.—Frock for 'Growing Girl.' Pattern is cut in 4 sizes: 6, 8, 10 and 12 years. A 10-year size will require 3½ yards of 36-inch material. As here shown the dress is of plaid gingham with collar, belt and cuffs of white drill. One could have checked woolen, serge, velveteen, taffeta, gabardine or percale. Pattern, 10 cents.



3456.—Comfortable Work Dress.—Pattern is cut in 4 sizes: Small, 32-34; Medium, 36-38; Large, 40-42; 44-46 inches bust measure. A 38-inch size requires 4½ yards of 36-inch material. Gingham, seersucker, chambray, lawn, sateen, alpaca, drill and linen could be used for this design. Pattern, 10 cents.

3432.—A Smart Dress.—Pattern is cut in 3 sizes: 16, 18 and 20 years. A 16-year size will require 3½ yards of 44-inch material. Satin, taffeta, duvetyne, broadcloth, velveteen, linen and tricotline are attractive for this model. The width of the skirt at lower edge is about 2 yards.

A pattern of this illustration mailed to any address on receipt of 10 cents in silver or stamps.

CATALOGUE NOTICE

Send 15c in silver or stamps for our up-to-date Spring and Summer 1921 Catalogue, containing over 500 designs of ladies', misses and children's patterns, a concise and comprehensive article on Dressmaking, also some points for the needle (illustrating 30 of the various simple stitches) all valuable to the home dressmaker.

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Waists of the Stylish Cotton Fabrics.....	from 98c to \$2.98
Last Spring's Prices were.....	from \$1.39 to \$8.98
Men's All-Wool Worsted or Cassimere Suits.....	from \$19.98 to \$34.98
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Last Spring's Prices were.....	from \$16.50 to \$21.50

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A Story for Children

The Mouse's Fright



Mr. Mouse and the Farmerette are Both Scared

MR. AND MRS. MOUSE had two homes—one in the country and one in town. Their town home was Mr. Green's big, roomy barn and during the cold winter, they kept very warm in their cozy little house under the hay loft. It was very easy to find lots to eat, for right near them were bins of corn and all sorts of other grain. Sometimes they were successful in stealing the cheese out of traps without putting them off.

But when summer came, the Mouse family left the indoors, for they loved their country home with the wide green fields for their children to play in. All day long, they would romp among the haystacks in the neighboring fields and play hide-and-seek with other families of mice.

It was summer now, and Mr. and Mrs. Mouse had come to the country once more. But this summer, they had not gone back to the same place, but had a brand new home near the center of the field. Here, they thought, no one would ever disturb them. However, one day when Mrs. Mouse was hanging up some curtains she heard a thud! thud! thud! right above her head and she was so frightened that she fell off of the chair and bumped her nose.

"What's the matter?" called her husband, running in.

"Oh! my dear, I've had such a fright," she panted. "Some one is knocking our roof in. Listen!"

Again the thud was heard, this time accompanied by a little scratching sound.

"It is only someone digging," he said calmly, but his nervous glance at the ceiling showed he was not so calm. And, no wonder, for it would not be very pleasant to have the roof come tumbling in on their heads.

"I am going to see what it is," he announced bravely, and walked to the door.

He went out cautiously and stood up to look around, but right above him there was such a terrible noise that he almost froze with terror. When he got his senses again, he went into the house shaking with fright.

At that moment, his uncle from town came in laughing so hard that his sides shook.

"Ha! ha! ha! That's the funniest thing I've seen for a long time," he managed to say.

When he could control himself, he explained.

"I heard Farmer Green's daughter say she was going to hoe corn. She started toward your house so I followed to see what would happen, and I saw—ha! ha! ha! When she saw you come out she was so frightened that he screamed and ran away as fast as she could, scaring you just as much by her scream. Anyhow, I don't believe you'll be bothered again by her."—L. M. K.

When Mother Smiles

When Mother smiles
It may not mean she's happy,
For Mother smiles oftentimes
Although she's sad—
And sings a little song
To help the heartache
And make the world think—maybe—
That she's glad.

Sometimes she smiles
A smile of tender patience;
Though cares pile heavy
And the road is rough,
Can she but find the strength
To help her dear ones
And smile away their troubles—
That's enough.

One reason why some people accomplish more results than others is because they attempt more.

Advertising is the flywheel of business. When it stops, business is at a standstill.

But when she smiles
That smile of radiant gladness
For cares and labors put
Away awhile,
When tired hands are freed
From dreary toiling,
The whole, round world is richer
For her smile.

Let Mother smile
The smile of gladness always;
She's had enough of smiling
Thru her tears.
Let's coax the smile by lifting
Mother's burdens
And keep it radiant, shining,
Thru the years.

—F. J. St. John.

A city can get along without some men but it can't get ahead without them.

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All stores sell 35-cent bottles, each sufficient to keep that rich, "Golden Shade" in your butter all the year round. Standard Butter Color for fifty years. Purely vegetable. Meets all food laws, State and National. Used by all large creameries. Will not color the buttermilk. Tasteless.

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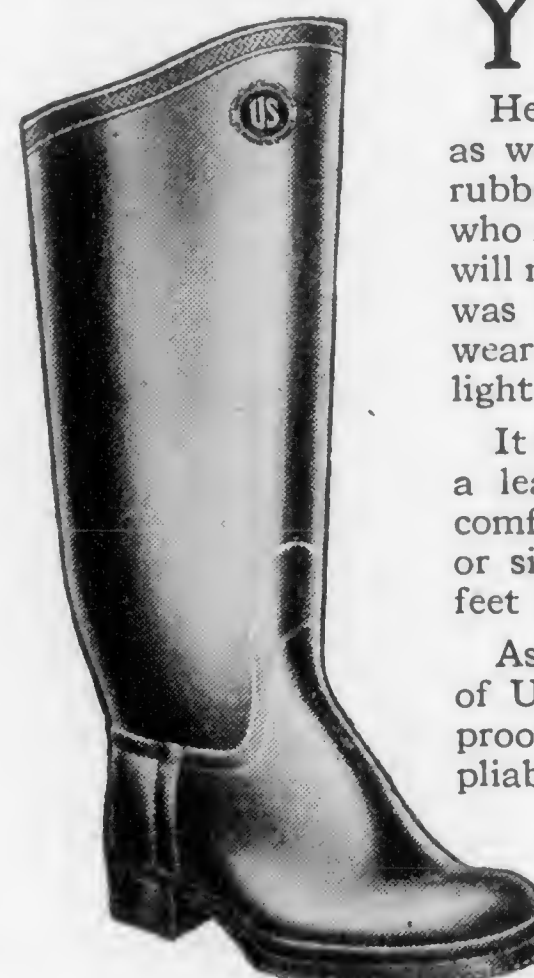
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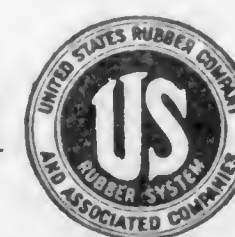
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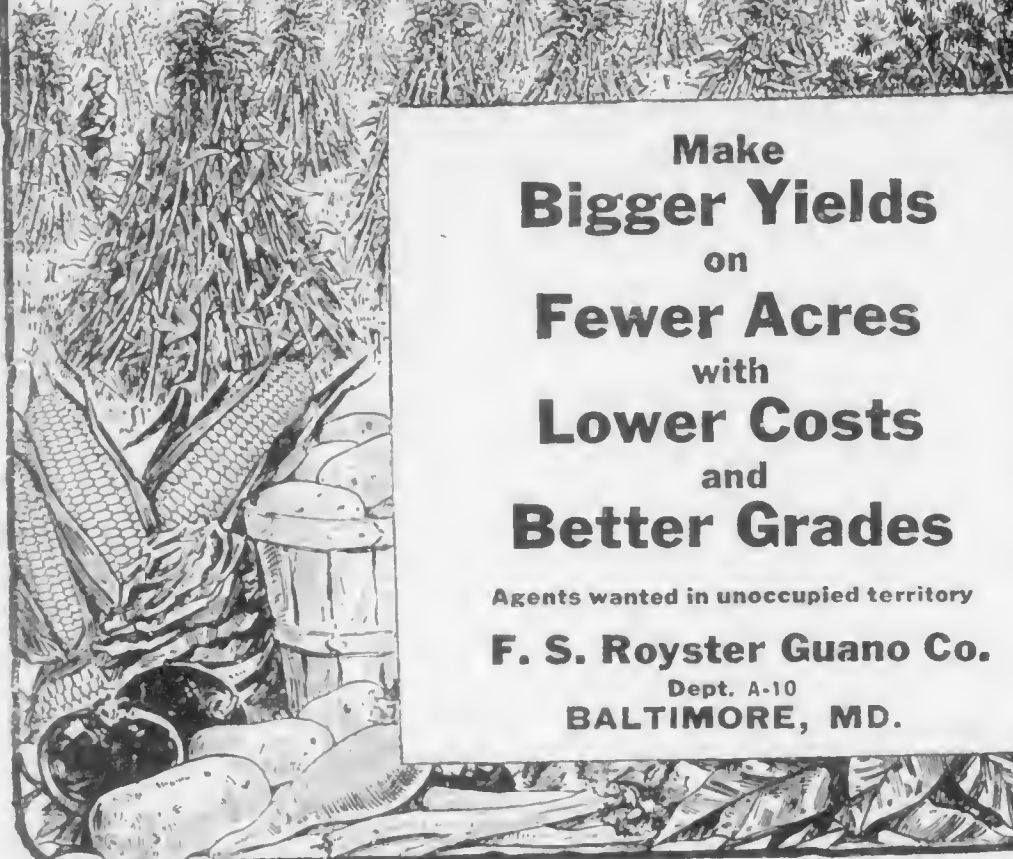
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MEN WHO SERVE YOU

Dr. Henry C. Taylor, Chief of the Office of Farm Management, United States Department of Agriculture, has spent his whole life in work which has been valuable in preparing him for his present position. He prepared himself for college, going directly from the country schools to Drake University, later studying farm economics and getting his degree of Ph. D. at the University of Wisconsin. Dr. Taylor came in close touch with farmers' problems during his



Dr. Henry C. Taylor,
Bureau of Farm Management

eight years' of experience running a farm for himself. In his work as Chief of the Office of Farm Management he tries to help the farmer to a better living. He believes that the farmers of the country should have more leisure and he aims to help them get it by finding and making known better methods of doing farm work. One of the notable achievements of Dr. Taylor has been his invention of a system of farm book-keeping which, while simple and easily adaptable to various conditions, serves the purpose as well as the more complicated systems.

GOOD ROADS AND THE MOTOR TRUCK

The strength of a chain is that of its weakest link. The value of an improved road is measured by the traffic that can be moved over it. If for any reason a section of road surface breaks down, the service given by the road is reduced to the capacity of the damaged section. To make the road an efficient means for transportation it must be properly constructed and kept in good condition over its entire length. A road that is partly good and partly damaged is like the curate's egg: "very good—in parts."

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er owners of motor trucks. Of these farmers 59 per cent stated that poor roads were a great disadvantage in the use of a motor truck, and 45 per cent gave bad roads as the reason for still using horses for part of their road hauling. As the farmers reporting were all located in 11 northeastern states, where the roads are much better than in the rest of the country, it is evident that road conditions in the other states must be a still greater obstacle to the profitable use of the motor truck.

In many sections of the country it has been found that what are called "improved" roads have broken down under the operation of motor trucks, and the lack of definite knowledge as to the wearing effect on the road of different sizes of truck has in some states led to the enactment of laws prohibiting the operation of the large capacity trucks, on the theory that this class of truck causes most of the road damage. This action has been based wholly upon the assumption that it is the gross weight of the truck that determines the impact, or wearing pressure on the road, a conclusion reached without any scientific investigation, or exact knowledge.

In view of the close relation of the problem of road damage to the question of better transportation facilities for the rural districts, the U. S. Bureau of Public Roads undertook this year to make a thorough study of the wearing effect on the road of trucks of different capacities, with varying tire equipment and differences of "unsprung" weight (weight not sustained by springs), running at varying rates of speed. The full report on these tests has not yet been published, but the preliminary report shows clearly that the impact of the moving truck is no determined by its gross weight, but that unsprung weight, tire equipment, overloading beyond rated capacity, and found that a 3-ton truck with a load speed of operation, are the important factors. In one series of tests it was of 5 tons running at a speed of 15 miles per hour over a 2-inch rut, had an impact of 17 tons.

A 51-ton truck with load of 51 tons, so designed as to have a relatively light unsprung weight, under the same conditions had an impact of only 12 tons.

These tests also showed that the speed at which the truck is operated affects the impact, which increases with increased speed of the truck. As the smaller trucks run at a higher than that of the slower moving their impact must be relatively greater than that of the slower-moving large truck.

These facts of official record effectively dispose of the claim that the large truck is responsible for most of the road damage, and should prevent the further enactment of restrictive laws based upon load capacity. With the theory of gross-weight injury disproved, there is not the slightest excuse for discrimination against the larger trucks.

There remains the important question of road construction to meet the requirements of the new transport agency. It will generally be found that the failure of an "improved" road to withstand motor truck traffic is due to some defect in design or construction, such as lack of drainage, insufficient foundations, or inferior materials, or to the action of frost in weakening the road. Highway engineering has been developed in recent years into an almost exact science, and it is now possible to design and build roads that will

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Must be good dry hand milkers. Large herd registered Holsteins. Modern barn and equipment. State age and send references in first letter. Wages \$50 per month and board.

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WINTERTHUR, DEL.

EXPERIENCED DAIRYMAN
wanted in March 1st—white man with small family to assist in the care of Guernsey cattle, the production of Certified Milk, and testing for Adulterated Milk. The farm is partly in the Borough of Haddonfield, 2 miles from Philadelphia. Give farm references and exp. E. J. Gill, Haddon Farm, Haddonfield, N.J.

WANTED Farmer and wife unencumbered on small Home Farm near Collegeville, Pa. Man must be practical, well experienced in housekeeping.
Two in family.
J. H. TOWNSEND, Box 12, Collegeville, Pa.

WANTED—by married man, a farm ready stocked on shares, or position as foreman on salary and privileges. Under-stand raising, grain raising, running farm machinery etc. G. L. Gato Penna. Farmer, Phila., Pa.

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\$1000 Secures 260 Acres With
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carry safely any traffic that they may be called upon to bear. These roads cost more to build in the first instance, but their far greater durability, and much lower cost of maintenance, make them the cheapest road in the long run. With roads properly designed and constructed the use of the motor truck can be extended to every section of the rural districts where there is freight to be moved, to the great advantage, not only of the farmer, but of the great consuming public that will be benefited by cheaper transportation of the products of our farms.

HAVE YOU ANY BIG TREES?

The Pennsylvania Department of Forestry has begun a campaign to locate the big trees of Pennsylvania. It is collecting information on the largest specimen of each kind of the 100 different species of forest trees that grow in the state. Col. Henry W. Shoemaker, a member of the State Forest Commission, and Professor Joseph S. Illick, chief of the Office of Research, are in charge of the project.

Professor Illick said he is seeking information about large, unique and historic trees. He believes each county of the state has some champion tree, and he wants to know about it.

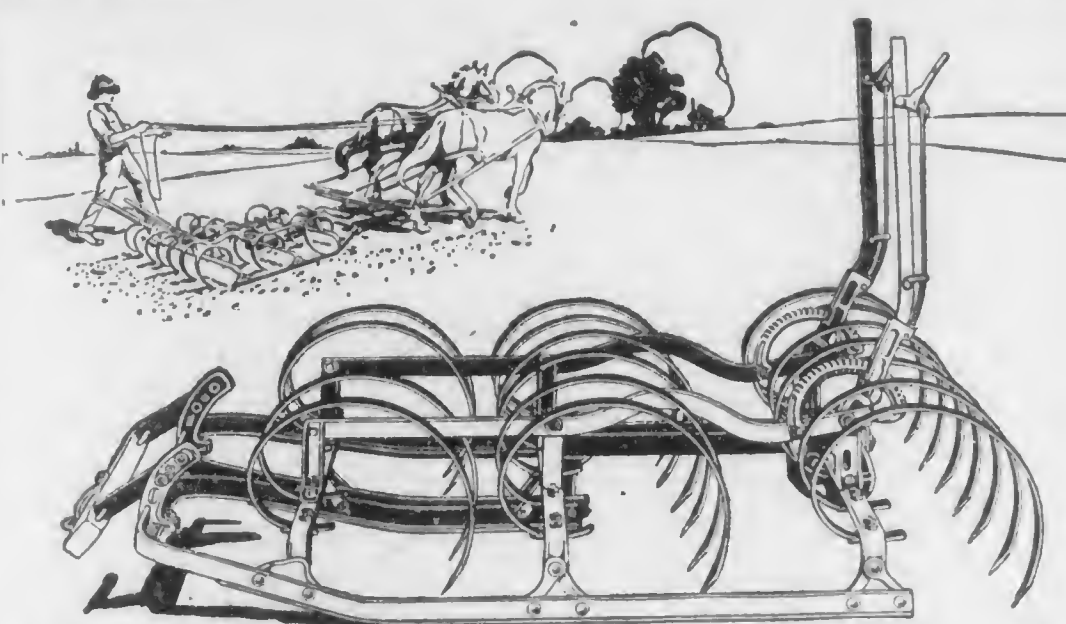
Bedford County boasts of the largest swamp white oak yet found in Pennsylvania. That tree is thirty-two feet in circumference at the base. Dauphin County claims the largest Sycamore, which is more than twenty-five feet in circumference at the base. It is declared that the state's largest sugar maple stand sat Eaglesmere, Sullivan County.

Professor Illick desires the following measurements of big trees; circumference at breast-height; total height of tree, and the total spread of branches.

POTATO WART UNDER CONTROL

In the war against potato wart the United States has done in less than two years what other countries had not succeeded in doing in decades. Wart has been for a long time a destructive disease of potatoes in Europe, and the belief always was that once a garden or field became infected there was no way of eradicating it. An infected area, even when no potatoes were planted in it for a number of years, would show the disease still virulent when again planted to potatoes. The potato wart disease was discovered last year in gardens in some small mining towns in Pennsylvania. The United States Department of Agriculture quarantined the infected areas and the specialists of the department began experiments in control. They have now announced that a field or garden infected with potato wart can be thoroughly disinfected by the use of steam and formaldehyde. The cost of the work, however, is high, and it will be used only when absolutely necessary in cleaning up the infected areas.

The investigators of the department, who have worked in co-operation with the state authorities of Pennsylvania and West Virginia, have also discovered varieties of potato that are immune to the wart disease, and steps are being taken to assist gardeners in the infected regions to purchase varieties of seed known to be immune. The department specialists now believe that further losses from the disease can be practically eliminated.



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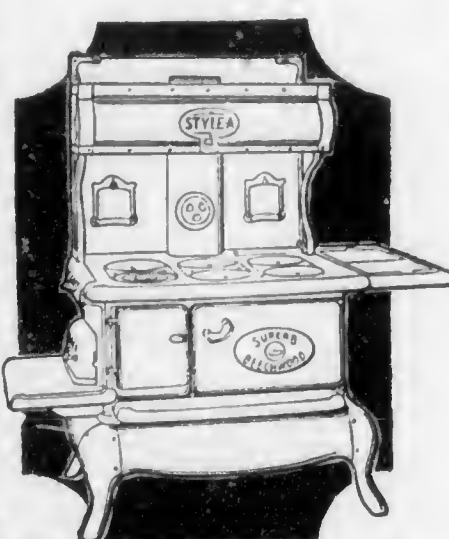
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Choice of three colors—blue, gray and brown. Write for folder.

THE VOICE OF THE PACK

(Continued From Page 20).

ter were more afraid of human beings than any other living creature. It wasn't a lynx—one of those curiosity-devoured little felines that will mew all day on a trail and never dare come near. It was much too large for a lynx. The feet felt too solidly. She had already given up the idea that it could be Wolf. There were no dogs in the mountains to follow at heel; and she had no desire whatever to meet Shag, the faithful hybrid that used to be her guardian in the hills. For Shag had gone to his well-deserved rest several seasons before. Two other possibilities remained. One was that this follower was a human being, the other that it was a cougar.

Ordinarily a human being is much more potentially dangerous to woman in the hills at night than a cougar. A cougar is an abject coward and some men are not. But Snowbird felt herself entirely capable of handling any human foe. They would have no advantage over her; they would have no purpose in killing from ambush; and she trusted to her own marksmanship implicitly. While it is an extremely difficult thing to shoot at a cougar leaping from the thicket, a tall man standing on a trail presents an easy target. Besides, she had a vague sense of discomfort that if this animal were a cougar, he was not acting true to form. He was altogether too bold.

She knew perfectly that many times since men came to live in the pine-clad mountains they have been followed by the great, tawny cats. Curiosity had something to do with it, and perhaps less pleasing reasons. But any dreadful instincts that such a cat may have, he utterly lacks courage to obey. He has an inborn fear of men, a fear that goes down to the roots of the world, and he simply doesn't dare make an attack. It was always a rather distressing experience, but nothing ever came of it except a good tale around a fireside. But most of these episodes, Snowbird remembered, occurred either in daylight or in the dry season. The reason was obviously that in the damp woods or at night a stalking cougar cannot be perceived by human senses. Her own senses could perceive this animal all too plainly—and the fact suggested unpleasant possibilities.

The animal on the trail behind her was taking no care at all to go silently. He was simply pat-patting along, wholly at his ease. He acted as if the fear that men have instilled in his breed was somehow missing. And that is why she instinctively tried to hurry on the trail.

The step kept pace. For a long mile, up a barren ridge, she heard every step it made. Then, as the brush closed deeper around her, she couldn't hear it at all.

She hurried on, straining to the silence. No, the sound was stopped. Could it be that the animal, fearful at last, had turned from her trail? And then for the first time a gasp that was not greatly different from a despairing sob caught at her throat. She heard the steps again, and they were in the thickets just beside her.

Two hours before Snowbird had left the house, on her long tramp to the ranger station, Dan had started home. He hadn't shot until sunset, as he had planned. The rear guard of the water-fowl—hardy birds who spent most of the winter in the lake region and which had come

south in the great flight that had been completed some weeks before—had passed in hundreds over his blind, and he had obtained the limit he had set upon himself—ten drake mallards—by four o'clock in the afternoon. If he stayed to shoot longer, his birds would have been wasted. So he started back along a certain winding trail that led thru the thickets and which would, if followed long enough carry him to the road that led to the valleys.

He rode one of Lennox's cattle ponies, the only piece of horse-flesh that Bill had not taken to the valleys when he had driven down the live stock. She was a pretty bay, a spirited, high-bred mare that could whip about on her hind legs at the touch of the rein on her neck. She made good time along the trail. And an hour before sunset he passed the only human habitation between the marsh and Lennox's house—the cabin that had been recently occupied by Landy Hildreth.

He glanced at the place as he passed and saw that it was deserted. No smell of wood smoke remained in the air. Evidently Landy had gone down to the settlements with his precious testimony in regard to the arson ring. Yet it was curious that no word had been heard of him. As far as Dan knew, neither the courts nor the forest service had taken action.

He hurried on, four miles farther. The trail entered the heavy thickets, and he had to ride slowly. It was as wild a section as could be found on the whole Divide. Once a deer leaped from the trail, and once he heard Wolf grunting in the thickets. And just as he came to a little cleared space, three strange, dark birds flung up on wide-spreading wings.

He knew them at once. All mountaineers come to know them before their days are done. They were buzzards, the followers of the dead, and what they were doing in the thicket just beside the trail, Dan did not dare to think.

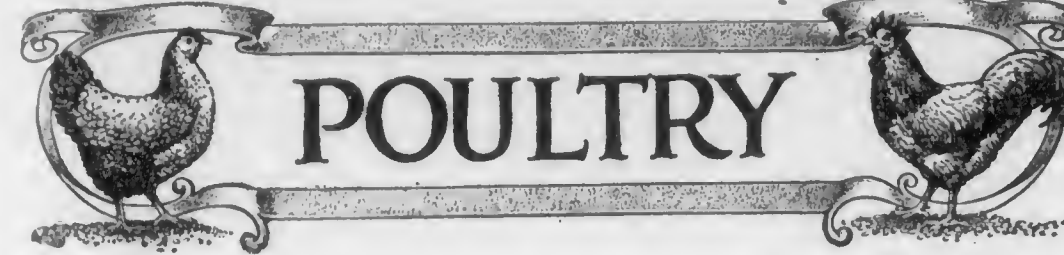
Of course they might be feeding on the body of a deer, mortally wounded by some hunter. He resolved to ride by without investigating. He glanced up. The buzzards were hovering in the sky, evidently waiting for him to pass. Then, mostly to relieve a curious sense of discomfort in his own mind, he stopped his horse and dismounted.

The twilight had started to fall, and already its first grayness had begun to soften the harder lines of forest and hill. And after his first glance at the curious white heap beside the trail, he was extremely glad that he had. But there was no chance to mistake the thing. The elements and much more terrible agents had each wrought their change, yet there was grisly evidence in plenty to show what had occurred. Dan didn't doubt for an instant but that it was the skeleton of Landy Hildreth.

He forced himself to go nearer. The buzzards were almost done, and one white bone from the shoulder gave unmistakable evidence of the passage of a bullet. What had happened thereafter, he could only guess.

He got back quickly on his horse. He understood now, why nothing had been heard of the evidence that Landy Hildreth was to turn over to the courts as to the activities of the arson ring. Some one—probably Bert Cranston himself—had been waiting on the trail. Others had come thereafter. And his lips set in his resolve to let this murder measure in the debt he had to pay Cranston.

(Continued Next Week).



HATCHING AND RAISING DUCKS

To hatch little ducks successfully the nests should be made on the ground, or an upturned piece of sod should be put in the nesting box. To start them the first two weeks they should be fed principally on rolled oats and curd made by scalding thick sour milk. The curd should be allowed to cool before feeding, as the ducks enjoy it more. If they can be gotten past the first two weeks, there is not much danger of losing them.

I lost very few of mine by starting them on rolled oats and curd. Rolled oats being light in weight, makes an inexpensive feed. Little ducks and peeps are both very fond of it.

They should have plenty of water to drink, but shouldn't be allowed to get themselves wet until they are about three weeks old. A drinking fountain is necessary for this purpose.



Anna E. Ryder and Her Ducks

ness. A little duck will drown quicker than a peep, if caught in the rain. I raised forty-one last year.

There is a good demand for duck eggs for setting and for ducks at Thanksgiving and Christmas.—Anna E. Ryder, Franklin Co., Pa.

LIMBERNECK

I am writing to see if you can tell me what is the matter with my purebred brown leghorn pullet. She has been sick for two days. The symptoms are: she sits on roost or floor and eats very little. She acts as if she had no control of her neck as her head keeps tipping backwards. She is a young hen and I would like to cure her.—C. B., Delaware Co., New York.

A loss of control of the neck muscles is usually due to limberneck caused by eating some form of decayed animal matter. Gum asafetida has been found to cure this trouble. Give a piece about the size of two peas every three hours until three doses have been given. Then wait about half a day and see if the sick bird begins to return to normal. Two or more doses about three hours apart are recommended if the hen does not begin to improve after the first series of treatments.

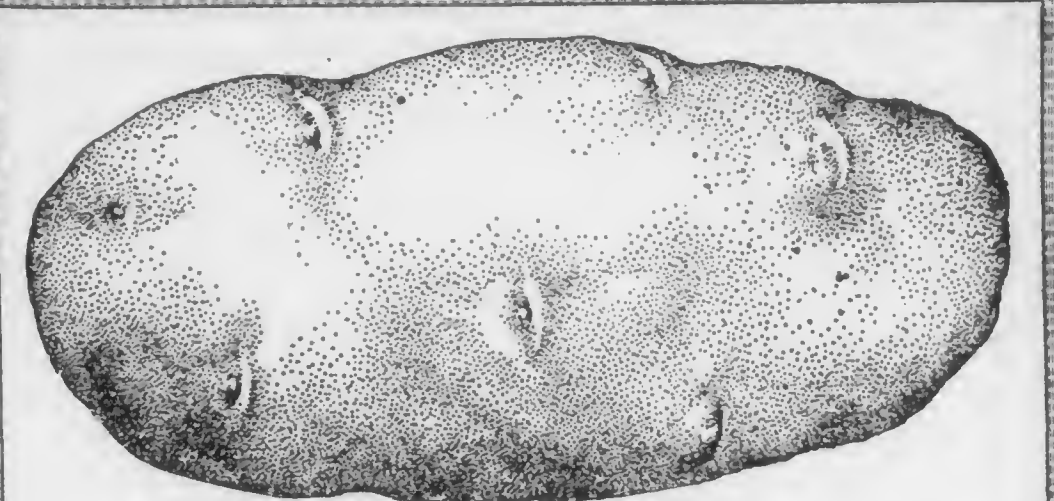
In cases of this kind treatment should start as soon as possible after the condition is discovered as the bird may weaken rapidly. Prevention is the best cure and consists in keeping the range free of all dead animals. Sometimes dogs will dig up or

bring home dead carcasses and place the material in the poultry yards or on the range.

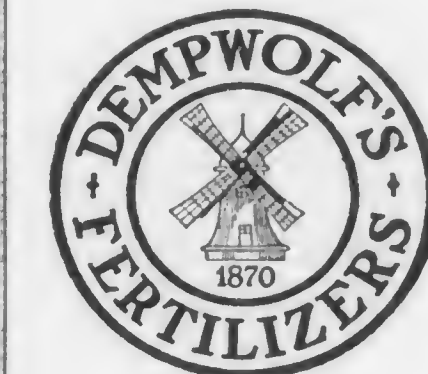
HENS WITH BRONCHITIS

I have a flock of Leghorn hens which has been laying regularly this winter but in the last few days several of them have died. The hens are taken sick suddenly and die before I can do anything for them. They open their beaks and gasp for breath and in a little while choke to death. I have tried everything for them but altho a few have gotten better the most of them do not last long. I have them in a well-lighted coop and they get lots of fresh air.—S. L., Lycoming County.

Hens with bronchitis show the symptoms you have indicated. Add 6 or eight drops of turpentine to a tablespoonful of castor oil and give that dose to each sick bird. Some cases will respond readily to treatment and others are difficult to cure. Isolate the sick birds in a clean place



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THE proper use of Dempwolf's Fertilizers will pay you better in crop returns than the work of "all the King's horses and all the King's men." No amount of work will make up for lack of fertility in your soil.

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Get your plans down on paper. Take plenty of time to study carefully; discuss it with others. Make it the ideal barn for your particular purposes.

Be sure you have the right amount of storage, enough light, air space and ventilation; work-saving arrangement for feeding, watering the stock and cleaning the stable; easy handling of the hay; and right location of the barn for sunshine and cold winds.

Make certain that the barn is correctly proportioned, is individual in appearance, a barn that is strong enough to withstand all storms—one that will add value to your farm.

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Vol. 49—No. 9

PHILADELPHIA, PA., SATURDAY, FEBRUARY 26, 1921

75 Cents per year

FARM LABOR—A SOCIAL SURVEY

A Review of the Conditions Facing Farm Laborers in Pennsylvania and New Jersey

Introduction:

A small group of New Jersey and Pennsylvania farmers have for the past three years been holding several meetings in Philadelphia each winter to study the economic, educational, social and religious problems of country life. The chief object in view was to seek concrete methods of living out in a broader way, right on their own farms and in their own neighborhoods, that sense of brotherhood and that passion for service which is a well recognized Christian ideal, but which so many fear is not practical in a work-a-day world.

Because of its complexities and its all important position in our agricultural future, the farm labor problem claimed a large share of attention. In order to learn more definitely what was the actual status of this problem, it was felt that a survey would be necessary, and as a result, the co-operation of the Inter-Church World Movement was secured and one of their investigators, Max Watson, made a study of labor conditions on farms in Burlington and Camden Counties, New Jersey, and Chester and Delaware Counties, Pennsylvania.

The following article is an abbreviated report of this study. Every effort has been made to preserve the spirit and thought of the author and where the group widely disagreed, there is a foot-note. These farmers felt that the high points in the report are:

- (1) Steady employment with opportunity for advancement.
- (2) Comfortable housing conditions and home-like surroundings.
- (3) Some system of profit-sharing or bonuses to increase interest.
- (4) Opportunities for recreation and self-expression.

The last point is especially stressed, and it must be admitted there is need for wide development of social and recreational opportunities for the hired man and his family, thru properly organized community effort. The fundamental human instincts and wants which take country people from rural communities to the great cities must be recognized and satisfied.

This review is published in the thought that there are many farmers who have been

struggling with this problem and who need some encouragement to live out their ideals. The compelling motive behind any endeavor to improve labor or other conditions must ever be that of our Christian obligation to our fellows, but the effort pays, not only in dollars and cents, but also in terms of those more subtle, but even more real advantages such as better service, higher standards of living, and healthy surroundings for the growing generation. Our American farms in the past have preserved and forwarded the best American ideals. Can we make this record true for the present and the future?

Data was secured from both the individual

hired man living in a tenant house and from the farm owner. It was found that the system of the married farm hand living in the farm tenant house was almost universal. This discussion was therefore confined to the problem involving the tenant farm hand and also the temporary Italian harvest hands. The first part of the review follows and it will be continued in future issues.

It is necessary in analyzing the problem of farm labor and the tendency of the farm laborer to leave the farm for industry to get the point of view of the farm hand.

It is necessary also, to recognize that there are certain fundamental human traits which exist in every individual. One of the most important of these is personal ambition as expressed in the desire to accumulate wealth; another is the desire to do as little physical work as possible, for the amount of income secured.

Little Opportunity for Advancement

A man in entering any field of labor, considers what the possibilities are in the future and whether or not he can ultimately secure a position which will bring him a greater income and at the same time demand less physical labor. It is significant, therefore, to recognize that the position of the farm hand offers little chance of promotion. Continued service or experience does not gain him any material advancement in income nor lessen the physical difficulties of his task. It is true that in industry, a large percentage of unskilled laborers or semi-skilled laborers are not able to reach a position which pays more than a mere existence wage or eliminate the hard physical labor. However, there is always the possibility of promotion and advancement and there are always a few who succeed in getting better positions. With the farm hand, however, it must be recognized that the prospect of promotion or the possibility of accumulating sufficient capital to be anything but a farmhand, is very remote and certainly cannot be considered an incentive to a man seeking this field of labor. Such conditions certainly



Cleanliness and Good Equipment Are Necessary for Clean Milk

cannot be attractive to an ambitious young man who hopes eventually to attain a position which may afford some of the luxuries of life and easier work. If the farm is to hold the ambitious young man, it must make it possible for him to see a line of promotion which will lead to more than what he can now find on the farm as a tenant hand. (Note 1). What ultimately becomes of farm tenant hands, who grow old without being able to accumulate anything for their last years, is a serious problem. Certainly a life of service should carry with it some possible assurance of the future.

Tenant Houses

It was found that the size of the tenant hand's family exceeded that of the family of the average unskilled laborer in the city by almost two persons. A number of cases were found where from eight to ten children under a working age were living at home. In all cases where there were families of over six children the question of mere food was a serious problem and every penny had to be counted in order to furnish the bare necessities of life. A farmer who employs a man with a large family and expects to keep him certainly should see that the man and his family are comfortably housed and that their living conditions are such that they may expect efficient work from the farmhand. A man living in a house which is full of vermin, poorly protected from the weather, or poorly heated cannot be expected to furnish a good day's work. Neither is it possible for a man who finds it necessary for his children to sleep on the floor or to go

without proper nourishment, to maintain a frame of mind which can make him efficient. The farmer should know what the living conditions of his tenants are, and do everything within his power and sound business reason to see that they are made comfortable. This need not be in any way a social obligation, but purely one of efficient business management. The tenant house must be considered from the point of view of the man and also from the point of view of the woman. The average tenant house can be described as a two-story, five or six-room frame dwelling, heated by a stove in the kitchen and a stove in the living room, the bedrooms being entirely unheated. The water supply is usually a pump located in a shed by the kitchen door or inside of the kitchen. The lighting is furnished by kerosene lamps. The toilet is an outhouse located from 75 to 100 feet from the house. This means that the average tenant house has none of the modern improvements of the last fifty years. Generally speaking, no attempt is made in constructing a tenant house to give it any architectural beauty. The design is severe and ugly in the extreme and there is nothing about its appearance which could be considered attractive. Its function is quite evidently to furnish a roof and rooms in which to eat and sleep. When it is considered that the house in which a family lives is the most concrete evidence of their social status and especially, in the mind of the child and mother, forms the greatest part of their immediate world, its importance cannot be over-estimated. Every farmer will admit that fifty per cent of the unrest of farm labor is due to the women. Un-

less the woman can have a house in which she can take a certain amount of pride and which she can feel is a suitable dwelling in which to live and rear her children, it is impossible for her to be satisfied. A farmer often expresses the idea that his farm help would not keep up a good house if they had one. This argument is fallacious from two points of view. First of all there is small incentive in trying to keep up a poor house, and secondly, if better houses were furnished it would be possible to secure the type of farmhands who would take sufficient interest to take proper care of the house. This better type of farm-hand will refuse to live in the average tenant house.

There is no more reason to have a poor and old-fashioned tenant house than there would be for a modern farmer to have an old, wornout traction engine with which to do his plowing. If the farmer would realize to what extent industrial investigation has proven the importance of home conditions, assuring the workman pleasant surroundings and a good night's rest and a contented family, he would not hesitate in bettering housing conditions from a standpoint of pure business efficiency. A tenant house can be built with very little additional expense and still be made home-like in appearance.

Note 1—It is felt that this statement regarding promotion is too severe, as it leaves out of consideration the thousands of farm hands who have become prosperous share farmers, renters and farm owners.

(Continued Next Week.)

National Tractor Show Great Event

By Far The Best Collection Of Power Farming Machinery Ever Assembled

The Sixth Annual National Tractor Show held in Columbus last week was without a doubt the most complete exhibition of power farming machinery ever held in this country. It not only reviewed the rapid progress that has been made in applying mechanical power to farm operations but it forcibly drew attention to the wonderful possibilities that gasoline and kerosene can bring to the American farmer. No one who inspected the eight large exhibition buildings, the permanent home of the Ohio State Fair, devoted exclusively to power farming machinery can help but visualize what farming will be in the future.

An Educational Exhibit

The idea back of the show was not to sell tractors. Power farming is broader than that. It includes the use of the truck for hauling purposes; the use of the tractor in soil preparation, planting, harvesting and other farm operations; the use of the motor cultivator in planting and cultivating rowed crops; the use of stationary engines in lighting, pumping water, milking and other services that liquid fuel can perform to make the burdens of the farmer lighter, to enable him to cut down production costs, to make life on the farm more enjoyable.

Manufacturers spared no expense in ably presenting the power farming idea. There was no admission fee, the only requirement being the securing of a pass by registration. The large dining hall on the grounds was open the entire week and lunch stands were located in each building. Everything possible for the comfort and convenience of visitors was provided. Covered passageways between the buildings and mammoth heating plants in each building protected visitors from cold and rain.

Education and service was a slogan back of each exhibit. How it worked, how to take care of it, how to operate it—in other words, service and education was the aim of every exhibitor. Detailed information of every kind was available, the intention being to show why power farming is a practicable thing, not only to the dealer but to the farmer.

In addition to the educational features found in each exhibit, a regular program on tractors and their operation was arranged by the management. Motion pictures on power farming were popular. The lectures on power farming, adapting the farm to power, determining types and size of tractors to buy, the trend of tractor design, ignition trouble, tractor hitches, lessons

from a tractor survey, the tractor and belt power, tractor service, tractor tools, community purchase of tractors, housing the tractors, by such prominent agricultural engineers as Olney, Dickerson, Davidson, Sjogren, Scoates, Blasingame, Aitkenhead, Duffee, Ives and McCuen and finally a frank discussion by four real farmers on what the tractor did for them rounded out the educational program. These men must be congratulated on the able way they handled their subjects and the interest which developed at these lectures indicated that their efforts were well worth while. The educational exhibit of the American Society of Agricultural Engineers was a worthy one—largely a compilation of data on power farming by the agricultural engineering departments of the state universities. The Society of Automotive Engineers also made the show an occasion for meeting and program on power farming.

Great Improvement Shown

The show was marked by great advances in the construction of implements and machinery, which are drawn and operated by tractor power. Simplicity of operation, control from the seat, better materials and a higher grade of workmanship characterized almost every exhibit. Many exhibits had revolving, skeleton sections of their products, making it possible for the spectator to see and understand the operation of their machines. Grain separators, sufficiently small for the needs of individual farms were there in far greater numbers than ever before. Removable panels and cut-out sections with the machine in motion made the principles of their operation plain. The idea of standardization is being accepted and rapidly developed by manufacturers. This was particularly noticeable in the products of tractor manufacturers who are producing trucks. The same engine and parts can be used interchangeably in either truck or tractor. Belt power take-off for trucks was featured by a number of concerns. Complete seedbed preparation in one operation was featured by one manufacturer.

A number of new tractors made their first public appearance. A small steam driven tractor for small farm use, of a design radically different from the ponderous steam tractors, attracted considerable interest. Several companies are working along similar lines, so it seems entirely possible that the small steam driven tractor may win a place in power farming, achieving to some extent the supremacy which the gas engine now holds. Several foreign makes were also exhibited.

There were numerous exhibitions of small garden tractors and implements.

Tractor drawn implements was the idea back of implement companies' exhibits. The difference in the wear and strain of tractor drawn implements over horse drawn implements is being recognized more and more by implement engineers. New designs and construction have been largely governed by that fact. Implement units are being built more and more in sizes to meet the demand of tractor service. Grain separators are being built small enough for the individual farm. On the other hand, especially in tillage and seedbed preparation tools, larger units demonstrated the fact that one man is able to control a larger number of operations. This fact in a large way accounts for the economy of tractor power and the popularity of power farming. Quite a few suggestions and changes in implement design were presented, a number of which will no doubt pass the test of service and be accepted as special tractor implements.

Companies manufacturing tractor accessories were very well represented. The latest development of magnetos, wheels, carburetor, engines, spark plugs, special hitches and steering devices, governors, bearings, lugs and so on were lavishly, tho tastily, exhibited.

Distinct Progress Shown

In contrasting the product of 1921 with those of former years, one thing is evident and encouraging. Tractor and implement engineering is making progress. Freak designs were not in evidence. New designs are conservative and practical. Engineers are being guided by past experience and are not attempting radical designs with which they hope to revolutionize the tractor industry. This fact will undoubtedly have a beneficial effect on new developments.

From any viewpoint, the show was a huge success. Any spectator who viewed the 356 exhibits—all presenting the idea of power applied to farm operations—could do nothing but praise the completeness with which the idea was presented. Early attendance, in spite of rain and inclement weather, gave a good indication of the interest of farmers and dealers and even the general public in the new era of farming operations. The management of the show, particularly Mr. Whaley and the Columbus Tractor Club, deserves praise for the way the show was managed.—By G. W. McCuen.

Soils and Fertilizers

Conducted by Dr. J. G. Lipman

Our readers are invited to send us their problems on soils and fertilizers and they will be answered by Dr. Lipman in this column.

COTTONSEED MEAL AS A FERTILIZER

Having the fertilizer problem on my mind, I am asking for advice as to cottonseed meal, which can be purchased for \$38 to \$39 per ton, which I think would be a good fertilizer alone. Am I right on this? What ingredients could be added and how much weight of them to a ton of cottonseed meal to make a complete fertilizer for tobacco, potatoes, oats or corn or would cotton meal not be valuable for all those crops? Is peanut meal as valuable for fertilizer as cotton meal?—S. R. G., Lancaster Co., Pa.

S. R. G., Penna.—The growers of tobacco regard cottonseed meal as a satisfactory fertilizer for their crop. This is to be accounted for by the fact that cottonseed meal contains phosphoric acid and potash as well as nitrogen. It is a relatively safe fertilizer to use under intensive methods and does not contain ingredients that would undesirable influence the quality of the tobacco. The following mixture may be recommended for tobacco.

Cottonseed meal	1000 lbs.
Nitrate of soda	200 lbs.
Acid phosphate	500 lbs.
Sulfate of potash	300 lbs.

The mixture thus made will contain some-

what less than 6% of ammonia, about 53% of phosphoric acid and 83% of potash. A mixture of this nature may be used safely at the rate of 2000 to 3000 pounds per acre.

For potatoes, corn and other general crops, plantfood may be secured more economically and more efficiently with the nitrogen derived from tankage, nitrate of soda and sulfate of ammonia rather than cottonseed meal. The potash might be derived likewise from muriate of potash. The following mixture should give good results for both potatoes and corn:

Nitrate of soda, 200 lbs.;
sulfate of ammonia, 200 lbs.;
tankage containing 10% of ammonia, 250 lbs.;
acid phosphate, 1150 lbs.;
muriate of potash, 200 lbs.

This mixture will contain about 53% ammonia, 10% of phosphoric acid and 5% of potash. It could be used at the rate of 1400 to 1800 pounds per acre for potatoes, and at the rate of 400 to 600 pounds per acre for corn, with good results.

Peanut meal is variable in composition. The best grades of peanut meal will contain between 6 and 7% of nitrogen, and about 14 to 15% of potash. Peanut meal is, for this reason, not as high grade a fertilizer as is cottonseed meal. However, if it could be bought cheaply enough everything considered, there should be no objection to its use as a substitute for cottonseed meal.

COKE OVEN SMOKE

I have been reading your topics on soil fertility and am interested in the ground lime rock writings published in the Pennsylvania Farmer. I live in the southwestern part of Fayette Co., Pa., near Uniontown. I have always used kiln burned lime. This lime counteracts the action of the sulphur in the coke smoke which settles on the ground, killing the vegetation. I am using either the burned lime or the ground lime rock. I would like you to please give me some information with reference to using the ground lime rock in place of the burned lime, and the results, if you know of any experiments, that have been worked out, where the coke smoke has to be taken into consideration.—F. L., Fayette Co., Pa.

F. L., Penna.—Smoke and fumes from coke may be employed: timothy, 3 pounds; orchard

ovens and blast furnaces contain a very considerable amount of sulfur. This is washed down by rain or otherwise carried down into the soil. Part of the sulfur exists in the form of the element sulfur. This is changed by bacteria into sulfuric acid, resulting in increasing the sourness of the soil to a marked degree. This will account for the beneficial results observed where burned and slaked lime have been employed near coke ovens and blast furnaces. The same result may be accomplished by ground limestone if it is remembered that ground limestone is not as efficient as burned and slaked lime for neutralizing soil acidity. For practical purposes it may be assumed that one ton of freshly burned lime is equivalent to about two tons of ground limestone. Ordinarily, a bushel of freshly burned lime, weighing about 80 to 100 pounds, when slaked will bulk up to about two bushels of slaked lime, each weighing about 65 pounds.

Aside from damage done by fumes and smoke thru increasing the sourness of the land, there is also direct damage done by fumes coming in contact with vegetation. It is possible to counteract soil acidity by using burned and slaked lime or ground limestone. On the other hand, it is not possible to counteract in any practicable way the injurious effect of smoke-laden and fume-laden air on the foliage of plants. Notable examples of law suits by farmers against extensive damage done by fumes containing sulfur are the cases of groups of farmers in the vicinity of Ducktown, Tenn., and of the Anaconda Copper mines in Montana. The Tennessee Copper Company in Tennessee, as well as the company controlling the copper smelters in Montana, have

grass, 2 pounds; red top, 2 pounds; Kentucky blue grass, 2 pounds; Italian rye grass, 1 pound; meadow fescue, 2 pounds; red clover, 2 pounds; alsike clover, 2 pounds; white clover, 2 pounds, and sweet clover, 2 pounds. This mixture may be used at the rate of 20 to 24 pounds per acre.

Prior to seeding down, there should be harrowed into the surface soil ground limestone at the rate of two tons per acre. A fertilizer consisting of a mixture of 400 pound of acid phosphate, 50 pounds of nitrate of soda and 50 pounds of muriate of potash per acre should be used. This should give the young plants a good start.

Another method that may be more suitable for land that is badly depleted would be to plow the land in the spring, fit the ground thoroughly and plant soybeans or a mixture of soybeans and cowpeas, seeded broadcast at the rate of 1 1/2 bushels per acre. It would be desirable before planting the soybeans to apply lime at the rate of about 1 to 1 1/2 tons of slaked lime per acre or 2 tons of ground limestone per acre, and also a fertilizer mixture consisting of 350 pounds of acid phosphate and 50 pounds of muriate of potash, 400 pounds per acre in all. If soybeans had never been grown on the particular field, it would be desirable to inoculate either with soil from a soybean field or with a commercial culture of soybean bacteria. The soybeans could either be plowed under in the fall or allowed to die on the ground, the field plowed in the following spring and oats and Canada field peas sown, using 1 1/2 bushels of each or 3 bushel of seed per acre. This crop could be harvested and fed green or made into hay. The land could then be plowed and fitted and seeded down to grass as already suggested.

OYSTER SHELLS FOR LIME

Have you any definite knowledge as to results in the use of oyster shell lime as a corrective of soil acidity? I shall be pleased to have results from some reliable tests in comparison with the common burned stone lime.—A. C. R., Bedford Co., Pa.

A. C. R., Penna.—Oyster shells are sold for agricultural purposes both as raw ground oyster shells and as burned shells. Samples of burned shells analyzed at the New Jersey Agr. Experiment Station contain approximately 63 to 66% of actual lime (quick lime). Aside from the lime, there is present in oyster shells about 1/3 to 1/4 of one per cent of phosphoric acid. Raw ground oyster shells contain 90 to 95 per cent of carbonate of lime, or about 50 to 53 per cent of actual lime.

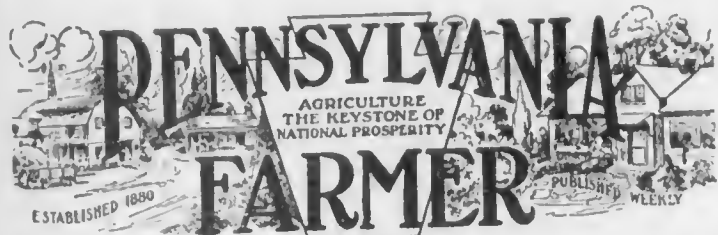
Experiments carried on at the New Jersey Agricultural Experiment Station and elsewhere show that oyster shell lime compares very favorably with limestone as a source of lime for correcting soil acidity. Because of the porous structure of the shells and their high content of lime, the product made from them dissolves readily in the soil and is efficient in neutralizing soil acidity. The burned shells contain no nitrogen. On the other hand, the raw ground shells contain about one-half of one per cent each of phosphoric acid and nitrogen. Hence, finely ground shells are not only a suitable material for neutralizing soil acidity, but also possess some value for supplying 10 pounds each per ton of phosphoric acid and nitrogen. The tests made at the New Jersey Experiment Station show that oyster shell lime has given fully as good results as ground limestone.

As we understand it, the master mind who is chosen for secretary of the interior need not necessarily be a stomach specialist.

This is a good time to plan crop rotations and to plot next summer's field work.



Part of Horticultural Exhibit at Recent State Products Show, Harrisburg, Pa.



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VOLUME 49 NUMBER 9

OUR JOB is to serve our readers. Whenever you are puzzled, write to us and we will help you if we can.
—The Editors

The shortest way to do many things is to do only one thing at a time.—Cecil.

Freight Rates

ANKIND does many things which illustrate the truth contained in the story of the woman (or was it a man) who killed the goose that laid the golden egg. One of the latest examples is that of the boosting of freight rates. There is evidence on every hand that the excessive rates in force today are responsible in no small degree for the slump in business. The decrease in passenger traffic which is so noticeable now as compared with a year ago is in a large measure due to the high cost under present rates. People stop buying or using anything when it becomes too expensive. If the managers of railroads are honestly seeking for a means of increasing their incomes, let them look into this feature; or, it is possible that the Government's guarantee of profits makes them indifferent to the rules of ordinary business?

Implement Repairs

FROM SOME source the report has been started that the manufacturers of farm implements and machinery will stop making and selling parts and repairs for their products. We have received a few inquiries as to whether the report is true or not and we learn the misinformation is being circulated verbally in some localities. We have investigated the matter and find there is absolutely no truth in the report. Manufacturers will continue to make and sell repairs as in the past.

A little reflection should convince any one that such a policy on the part of a manufacturer would be suicidal. Business men are not so short-sighted as to think they could adopt such a plan in order to sell new machinery and stay in business.

The Spur of Necessity

WHILE WE have no sympathy with any movement to destroy labor organizations or to lessen the advancement made towards establishing the principle of collective bargaining, there is one underlying principle which it is well for leaders in all lines to remember. It may be termed briefly, the spur of necessity. The advancement of the race and the development of the individual are due to the necessity for work and accomplishment more than to anything else. Any policy that eliminates the necessity for individual effort dwarfs the individual whether it be in the form of an assured income without effort or a guaranteed wage for a minimum effort.

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Standardizing a day's work for a uniform return removes the greatest spur to achievement and tends to reduce mankind to a dead level. If this principle should be generally adopted it would mark the end of progress.

The following testimony of a railroad company before the Labor Board is interesting in this connection:

Piece work car repairers decreased 41.4 per cent in efficiency under the system of guaranteeing a fixed minimum rate per hour.

Piece work air brake repairers decreased 32.4 per cent in efficiency at one shop and 33.4 per cent at another.

Piece work painters working on passenger cars decreased 25.07 per cent in efficiency after the change.

Piece workers in the brass foundry decreased 10.8 per cent in efficiency; the time required to perform various operations in the foundry increased by from 9.7 per cent to 50 per cent when the men were no longer paid by the piece.

Similarly it took a man 1.47 hours longer to paint a locomotive under the hourly system of pay than it did when he was paid by the amount of work he turned out. The time required for a man to paint a freight car increased 27.89 hours when the man was paid by the hour instead of by the job.

The average number of wheels bored per hour at the Huntingdon shops decreased 47 per cent when the change was made from the piece work basis to the hourly basis.

A Bird Bill

A BILL to place the quail in the list of song birds in order to protect it has been introduced in the Pennsylvania Legislature by Hon. S. F. Zook of Blair County. At present it is classified as a game bird, for which there is an open season, when it may be slaughtered by hunters. The quail subsists entirely upon insects and weed seeds and for this reason is the farmer's greatest ally in the fight against these pests.

The killing of quail is not a business for real sportsmen. The quiet, clannish nature of these birds makes shooting of them about like attacking a flock of sheep with a dog and shotgun. True, they do make excellent eating, but their economic value in the destruction of pests far outweighs their food value. The farmers and others interested in this matter should write a card or letter without delay approving the passage of the bill and send it to Hon. S. F. Zook, House of Representatives, Harrisburg, Pa. Granges, clubs and other organizations should do the same. Farmers, you can put this over if you will, but action must be prompt.

Our Washington Letter

The Bureau of Crop Estimates of the Department of Agriculture has issued a statement showing that the farmers of the United States have lost more by the recent slump in prices of farm

products than the war-time price gains.

Commenting on this statement, Dr. T. C. Atkinson, Washington representative of the National Grange, says that unless an equilibrium is reached between the prices of farm products and industrial products, the country is going to see a more serious situation than it is now passing thru. A high level of prices for industrial products and a low level for farm products will inevitably mean a food shortage.

After carefully considering the question of a fair ratio of wages for the mechanic and the farmer, deducting the lower cost of living in the country and the farm and garden supplies, Dr. Atkinson concedes that the man in the country should receive one-third less than the worker equally well qualified receives in the city; if a mechanic in town has a \$6 a day the man on the farm should receive \$4 a day.

The Bureau of Markets is greatly encouraged over the success of the Federal warehouse act. Officials of a wool warehouse company in Chicago report that they received 33,000 consignments in 1920, six times as many as they had in the preceding year. The four warehouses owned by this company were the first wool warehouses licensed under the United States warehouse act, and the company officials say that their increased business is largely a result of this. They feel that the department's approval establishes business confidence.

How to Be Happy

"If I knew how to omit," wrote Stevenson on the art of composition, "I should ask no further knowledge."

The art of writing and the art of living are alike in this respect. Happiness in a life, like beauty in a work of art, depends largely upon what is left out.

When you crowd your living room with bric-a-brac you destroy the comfort of your home. When you fill your days with trifling pleasures and petty occupations you make happiness impossible.

Only they may be happy who do not expect too much. He who looks for special favor is sure to be disappointed. He who enters life unprepared for the world's neglect lays up future discontent for himself. He who seeks to fill his life beyond its natural capacity will end his day like a tired child, worn out with too much pleasure.

He shall be happy who makes honest use of what he has and spends no pity on himself because it is not more; who demands from imperfect men and women no more than imperfection can deliver; who looks honestly at himself, knows his limitations, recognizes his powers and spends what God has given him courageously.

—Alvin E. Magary.

No other bird is so valuable fortunately a number of these unfriendly Congressmen are members of the Interstate and Foreign Commerce Committee of the House, having the French Truth in Fabric bill in charge.

It is the suggestion of friends of the measure that the representatives of the wool growers, the woolen manufacturers, the textile and clothing industries meet in conference and agree upon a truth in fabric bill which will be sufficiently acceptable to these interests to insure its enactment in Congress. There is a growing sentiment for a law which will put a stop to the selling of shoddy for fleece wools in woven textiles. It is thought that this sentiment should be drafted into a practical, effective bill which will enable its friends to answer satisfactorily the arguments of its opponents.

A "National Corn Meal Week" under authority of Congress, to be observed early in April, is proposed in a resolution introduced by Representative Charles F. Reavis, of Nebraska. Its object is to aid the farmers to obtain a better price for corn by increasing the demand for corn products.

At this date it is apparent that the only chance of any packer legislation being enacted

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during this session of Congress is that the Hagen Committee amendment may pass the House and Senate without amendment.

As the hearings before the House Committee on Banking and Currency on the farm organizations proceed, it develops that the object of the committee in making the investigation is to secure information as to the relation existing between the county agents and the American Farm Bureau Federation, with the view, if possible, of divorcing the county agents from the farm bureaus. There seems to be an idea prevailing in Congress that the county agents are promoting the farm bureau federations and that the state and national federations could not exist without the funds appropriated by the government for the support of the county agents.

Dr. A. C. True, director of the States Relations Service of the Federal Department of Agriculture, was called before the committee, February 15th, to testify as to the relations of the county agent to the local farm bureau. Dr. True said the States Relations Service had nothing to do with recent farm bureau federation development; that while the States Relations Service had found the county farm bureaus to be the best means of co-operating with farmers in demonstration and educational work, the county agent was under obligation to assist and advise all the farmers whether members of the farm bureau or not, and to co-operate with any farm organization that desired such co-operation.

In reply to the question as to whether the farm bureau depended upon the county agent system for its existence, Dr. True said he could see no reason why the farm bureau should not exist without the county agent. He said instructions had been sent to county agents not to participate in membership drives of the farm bureaus, and he explained that the States Relations Service did not co-operate with the farm bureau federations as it does with the county farm bureaus. The Department of Agriculture took no part in organizing the state and national federations, and the States Relations Service is not responsible for anything the federation is doing.

Dr. True said he did not want a condition where farm organizations are quarreling with one another. It is to be regretted that leaders of one or two of the farm organizations represented in Washington, especially the National Board of Farm Organizations, have used these hearings as a means of attacking the American Farm Bureau Federation before a Congressional committee. It can have no other effect than to lessen the influence of all the farm organizations in Congress.

The Emergency Tariff bill passed the Senate by a vote of 43 to 30, February 15th. It was opposed by several New England Senators and favored by a number of Southern Senators. The bill was primarily designed as a temporary agricultural relief measure, carrying tariff duties on a few farm products. As it goes back to the House it carries a number of amendments which will tend to delay its progress in conference. Senate leaders claim to have positive assurances from the President that he will veto the bill.—E. E. Reynolds.

HARRISBURG LETTER

An Expensive Intermission.—Perhaps because a good excuse was hard to find members of the Pennsylvania Legislature did not try to give any when they voted to have a recess this week. Some of the members of the House registered disapproval by negative votes, but no one discussed the matter and everyone, men on per diem salaries included, ducked out of town as soon as possible after the gavel fell. It was a curious legislative proceeding. For some time it has been apparent that the legislative leaders were waiting for the Governor to complete his bills and various commissions to send in their propositions and that the administration was waiting for Senator Boies Penrose and his friends to show their hands. As a consequence there was not much being done, which is not an unmixed blessing when one considers the number of bills passed in former sessions, and most of the members appeared to welcome the chance to go home and attend to their own affairs rather than stay here for half a week's consideration of public business. Meanwhile, with State Administration and various elements insisting on economy the general assembly goes home and the pay of something like 300 persons connected with the Legislature runs along just like the pay of the legislators themselves. But, by the time the lawmakers come back there will be a program, something which has been lacking ever since the session opened. The Governor will have his bills prepared and the forces opposed to any increase of revenue will have made up their minds, while the battle over a constitutional convention will have been formed.

The Administration's Crux.—The Sprout Administration is now at its critical point and the next two months will determine whether the Governor is to be a big factor in state affairs the remainder of his term or go the way of some predecessors. He does not intend to go into the back-ground if he can help it. If his propositions for raising revenue fall of passage and it is necessary to cut the appropriations and the educational, welfare and similar projects much in the public eye and ear of late do not materialize there will naturally be a dimming of prestige. It presents a very interesting situation to the student of Pennsylvania politics and one which cannot fail to be of interest to the man on the fence. The Sprout Administration has a good bit of paper out, to use an advertising expression, and there are elements active at the State Capitol which would like to interfere with the performance.

The Agricultural Bills.—Attention is being given by the State Department of Agriculture to business and legislation affecting that branch of the government and the interests it is charged to keep in a way that is refreshing when one considers some sessions of the past. The clashing of views over coal and manufacturing taxes, constitutional conventions, enforcement codes and similar measures are not concerning Secretary Fred Rasmussen as much as a measure that will weed out the bad seeds and enable the state to get first hand data in regard to products. The Secretary expects to have a new pure seed bill ready at an early date, the result of his observations and various studies made by his people. Presentation of the bill will depend upon the taxation code which was drafted by a commission after long study and which would place the assessment and collection of taxes on a basis costing a third less than the present. Just how this would affect the proposed statistical system has not been worked out. The Secretary believes the pending bills relative to pay for men and teams uprooting thistles will go a long way toward getting rid of weeds where seriously needed. Original plans were found to be ill suited to conditions in a diversified state like Pennsylvania.

The State Fair Bill.—While the people interested in the county fairs have opened attacks upon the state fair project and a bill is in hand for a fair on a rather circumscribed scale plans for the big State Fair are going ahead and the bill will soon appear. It will leave to the Governor and Secretary and a commission the selection and acquisition of a site and the details. What was aimed at in the recent conference was launching a proposition that would assemble the best and be a state affair, rising above the purely local exhibition which has a well defined place.

Road Bids In Hand.—The first opening of bids for 1921 road construction, covering about 100 miles, showed a downward movement in prices and considerable competition for business. In fact there were over 125 bids presented and on only one project were no bids received. The figures are being gone over and if satisfactory some awards will be made as early as \$65,000 to \$70,000 a mile does not appear to have caused local committees to object. Instead, they are demanding the roads no matter what the cost, a rather different situation from some years ago. Extent of the remainder of the state program will depend upon the highway bills now in progress thru the houses. It is believed a pretty ambitious program will be launched and that counties will spend about a dozen millions for their shares.

Midwinter Fires.—Weather conditions, lack of snow and dry periods have resulted in more forest fires in January and February than known in a long time and caused some apprehension among foresters for the spring period. The state's forest fire service will probably be called upon to be ready for a severe test and preparations to demonstrate efficiency have been going on. Incidentally, bills now pending would enable a very effective organization to be built up and efforts to get them passed in time to meet the coming danger period are under way on "The Hill."

Protecting Poultry.—Bills to protect domestic animals and poultry from reckless hunters and automobilists are in the Legislature and bid fair to pass in spite of ridiculous amendments to the game code, which would restrict careless shooting, make a small game season in November and permit revocation of hunters' licenses for offenses seem to be favored, although they have yet to face some fights. It may be added the fishermen's license bill provides that owners of lands thru which streams flow or upon which they abut are relieved from licenses, just as they are in the case of hunters' licenses.

Quarantine Stands.—Secretary Fred Rasmussen in announcing the potato wart quarantine would have to stand in the districts where establishment has let it be known the state is prepared to help in the growing of immune seed potatoes. In some communities the state will assist the men selected by neighbors to grow the potatoes for seeding.

The Weasel Bounty.—While the reports of the State Game Commission show a pretty general move toward getting rid of weasels the agricultural counties are lagging in sending in scalps. The state has literally hundreds of thousands of dollars for such payments. A new bill just presented would fix a bounty of \$1.50 for each weasel.—Hamilton, Harrisburg.

Pennsylvania Farmer

5-237

paid for by the government, up to \$67.50 for grade cows and to \$162.50 for registered stock. Before inspection the individuals are appraised and the prices set are accepted after test. The conditions, in many ways are unusually favorable now for having the herds freed of disease. Milk is low in price, cows are also, and a reduction of the troublesome surplus of milk is badly needed, besides the greater need of establishing a clean herd at the earliest opportunity, as good business principle and as a protection to human health.

Two New State Leaders.—E. V. Underwood, of Buffalo has been selected as the new secretary of the State Farm Bureau Federation, to succeed H. E. Babcock. N. F. Webb, a dairy farmer of Cortland, has been elected as the new president of the G. L. F. Exchange, the biggest farm organization engaged in buying farm supplies in the East.

Milk Problems.—Milk dealers of Auburn refuse to lower the retail price of milk, asking 14 cents per quart and paying farmers 5 and 6 cents. Farmers are taking exception to this, and another lively clash may come there, to the benefit of consumers, if the dealers do not act fairly.

Vegetable Shipments.—Vegetables from state points and from the South and Texas are failing to sell for enough to cover expenses of shipment in some cases. On one carload of Florida lettuce the grower had to lose the cost of producing it, and \$152 extra to pay the freight to New York. Texas spinach fared even worse last week. Dozens of New York farmers have had similar experiences. Consumers are buying and eating less, a situation that demands serious consideration.

Daylight Saving.—Despite the farmers' very active and determined protests it is feared that they may be forced to accept a compromise on the repeal of the daylight saving law—cutting the time shorter in which it shall prevail. Governor Miller will stand by his pre-election pledges to farmers, but both houses of the Legislature may not take the same stand that they did a year ago in voting against it. The cities are very active in urging daylight saving.

Cabbage Moving Slowly.—Despite a trebled production in this state, which supplies about half the total consumption of the country shipments so far have been below normal, as there is so little demand. Reports from 39 truck associations and large growers in the state indicate an increase of 29 per cent in commercial storage of cabbage compared to last year. Other leading cabbage states report an average increase in similar storage of 13 per cent.—E. M. F.

NEW JERSEY NEWS

Gypsy Moth Bill.—Governor Edwards has signed a bill by House Majority Leader Rowland of Camden, authorizing the State Department of Agriculture thru the State Entomologist to treat upon lands for the purpose of destroying the gypsy moth, which is already credited with having infested certain sections of New Jersey and causing damage. Quite some money will soon be devoted by the state to the extermination of this pest, which is an enemy to crops. The Governor has also affixed his approval to a measure by Assemblyman Hastings, who comes from the agricultural county of Somerset, which appropriates to the Department of Agriculture \$30,000 to indemnify owners of cattle condemned under the tuberculin test, the money to be expended under the direction of the State Bureau of Animal Industries. The executive signature has also been placed on a bill by Senate Majority Leader Mackay, of the farming county of Bergen, this measure increasing the membership of the State Department of Health from eight to ten, the two additional members to be women. The passage of the bill was in conformity with a platform pledge of the party at the November election, and the move was heartily endorsed by the women's division of the G. O. P. This was the busiest week of the Legislature, Monday being signalized by the holding of twelve hearings. The daylight saving measure is soon to be up for action in both the Senate and House, and it will meet with vigorous opposition by the representatives of the rural sections, who after hearing what the agriculturists had to say about the losses that would arise by its enactment, feel that they are justified in fighting it. William H. Read, of Tenant, introduced the speakers for the farmers at the hearing. Harry Herbert, of Tenant, spoke for the potato growers. He declared that he raised three millions of potatoes in 1920, and that the potato growers were a unit in deciding that daylight saving was a detriment to the farmer and a source of great expense. Clement Lewis, a peach grower of Burlington, stated that daylight saving would work great hardships to the peach crop in that part of South Jersey, and that under the plan, the peach scale would develop rapidly in the state. He accounted for this by saying, that when the trees were sprayed in the early morning while the dew was on them, the liquid would run off and no benefit would be obtained. John Barclay, a prize apple grower of New Jersey, put forth the same kind of an argument in relation to fruit trees. Other farmers spoke along similar lines, saying that it was impossible to get their help out in the orchards and fields to work when the dew was still on the trees and ground, and that they could not cut hay and carry on any other kind of work at an earlier hour.—Kelly, Trenton.

NEW YORK LETTER

Tubercular Inspection Appraisal.—So many cattle are being condemned for tuberculosis in Madison County that the milk supply is threatened and inspection is only begun. The accredited herd system is used. Condemned cattle are

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WHEN the old Liberty Bell, at Philadelphia, pealed forth its message of freedom, from the belfry of Independence Hall, it also sounded a guarantee of protection against the British tyrant. Nearly a century and a half has since passed, and still both the brick and wood portions of the old building have withstood equally well the ravages of weather. It is a striking example of paint's wonderful protective qualities. The way to prevent decay, is not to let it start. That's what good paints do. Of greatest importance: the economical time to paint, is before it is needed, not after.

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The Montgomery County Bull Association

THE Montgomery County, Pa. Bull Association has just completed its first year's work, having purchased its first bulls Dec. 15, 1919. This Association started its work with eight purebred Holstein bulls and about 45 members representing about 560 cows.

A bull was purchased for each block of 70 cows. Each member paying \$15 per cow for each cow entered. This you will see, allows for the cost of the bulls to be \$1050 each, a figure that permitted the purchase of excellent bulls of the very best breeding.

The bulls were selected by a committee consisting of three members of the Association, together with County Agent A. K. Rothenberg and R. R. Welsh of State College. They were instructed to select nothing but good, straight individuals, whose dams or grand-dams had made at least 800 lbs. of butter, or 20,000 lbs. milk in 365 days, and which were sold under a 60-day retest guarantee for tuberculosis.

There are many advantages in an Association of this kind. By this plan a farmer can breed his cows to a high class bull for the same initial cost as to his own ordinary or scrub bull. Besides, it is necessary to replace a bull every two or three years to avoid inbreeding. By joining the bull association we have the use of a different bull every two years, for as long as they live, from the one initial cost. Again the cost of keeping the bull is only 20 to 25 per cent as much as where each farmer owns his own bull, as each member pays his share according to the number of cows he has shares for. Another great advantage is the line-breeding which these bulls make possible. Again, by using a bull 2 years in one block, then moving to another and so on, we have an excellent opportunity to demonstrate what any



Itchen's Golden Daisy of Chilmark 61690—14,367 lbs. Milk; 669.64 lbs. Butterfat

A glance at the breeding of the animals selected will convince any one that these qualities were secured. Space will not permit going over the breeding in detail. Practically all the dams of these bulls are under full age, many of them being first calf heifers, so there is an excellent opportunity for them to materially increase their records.

The path of this Association has been by no means a smooth one. There are many things peculiar to this section that make the work difficult. One of these is the fact that Montgomery County dairymen have been buyers of dairy cattle rather than breeders. As a result, there has been quite a lot of impatience on the part of some, as the returns are necessarily slow for the first few years.

Another point is the fact that, for years, Montgomery County has been buying tuberculosis in dairy cows which are shipped out of other sections. The Association is working to have all herds placed on the accredited, t. b. free list. This condition makes the loss from this cause a heavy one: there has been a large percentage of reactors in a number

The calves of each succeeding generation will contain more and more of the blood of these sires so that every record made by one of their daughters will increase not only her own value but the value of every other animal of the same line of breeding, which at the end of a few years will be practically all the animals raised by all the members of the Association.

The Association plans to advertise as a body. This will allow a much greater display than would be possible if each man did his own advertising. Besides it will attract more buyers to this section if they know they can select cattle from 45 or more tuberculosis tested herds, all bred to bulls of thousand-pound breeding—E. P. Bechtel.

Funny how inconsistent some folks are. Take that man, for instance, who weighs out every speck of feed so his cattle will get a balanced ration, then turns around and sells all the milk and butter which his children need for health, growth and happiness.

TYRONE AND WARRIOR'S MARK, PA., COWS MAKE FINE RECORDS

The Tyrone Cowtesting Association has completed another 30-day record and present a splendid list of high producers. Thirty-two of the 277 cows on which records were kept, qualified for the merit class. The owners and number of merit cows are as follows:

Taylor Bros., 6; C. M. Waple, 6; Geo. Rumbarger, 5; W. T. Kephart, 4; W. A. Beck, 3; Peck Bros., 3; A. S. Ellenberger, 2; H. L. Glazier, 2; W. A. Stewart, 1.

The cow leading in milk production is one owned by Geo. Rumbarger, Warrior's Mark, with a record of 2065 lbs. The cow is followed closely by one owned by Taylor Bros., Warrior's Mark, that produced 1889 lbs. This latter cow leads in butterfat production with 73.6 lbs. to her credit and followed closely by Mr. Rumbarger's cow with 68.1 lbs. of butterfat.

The average for the highest ten cows is 1398 lbs. of milk and 52.3 lbs. of butterfat for the 30-day records. This is the best average the Association has had so far.—Paul Taylor, Tester.

BARN SAFETY-FIRST

A bad fall may be avoided in the barn by painting the lower step of the stairs white or else using the whitewash brush on it. In the half darkness of most barns the last step of the stairs is always a danger spot. This plan may be carried out in the cellar stairway when the cellar is poorly lighted.—A. J. B.

WOMEN OPERATE MILKER

In regard to our experience with the milking machine, we think it a labor-saving device. We keep from 6 to 10 cows and my daughter and I do the milking as my husband is alone on a large four-horse farm and has enough to do without bothering with the milking. So my daughter and I came to the conclusion that we would get a machine. We not only find it a great help but a good success. It works out all right as a labor-saving proposition and gives satisfaction. The cows like it as well or better than hand milking. We never had any bother at all. We put it on heifers that never lifted a foot. It is very easy to handle. We have a 14 horsepower engine that gives us satisfaction and is easy for a woman to start. I take care of it myself, take it apart and clean and repair it if necessary. With all this, it is much better than milking by hand. We thing it very nice to sit down and watch milk flow into a bucket in a sanitary way.

Then, too, we have a separator house by the cow stable so we have it convenient to empty the milk and run the separator with the same line shaft that runs the milker, and have the separator so adjusted that, while not in operation, by handling a small lever, it is thrown out of gear, thus we have perfect control of the machine. That gives us the skimmed milk for our calves. They are loose in pens close by, with places to protrude their heads which makes it easy to feed them. And we also have a small 2 horsepower engine for house use. It runs the washing machine and wringer at the same time, turns the churn, makes ice cream, turns the grindstone, and we find that the farmer's wife doesn't need to be a slave any longer.—Mrs. Fred H. Stamm, Clinton Co., Pa.



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cow barn clean, avoiding danger of disease and infection and loss of profit by milk refused on account of uncleanness.

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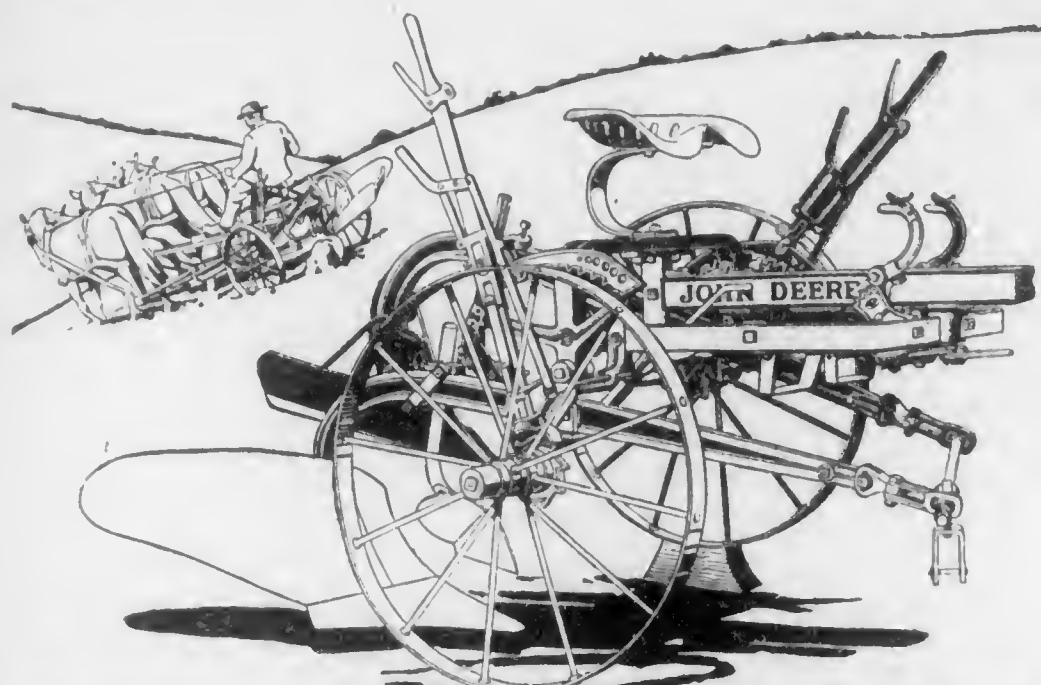
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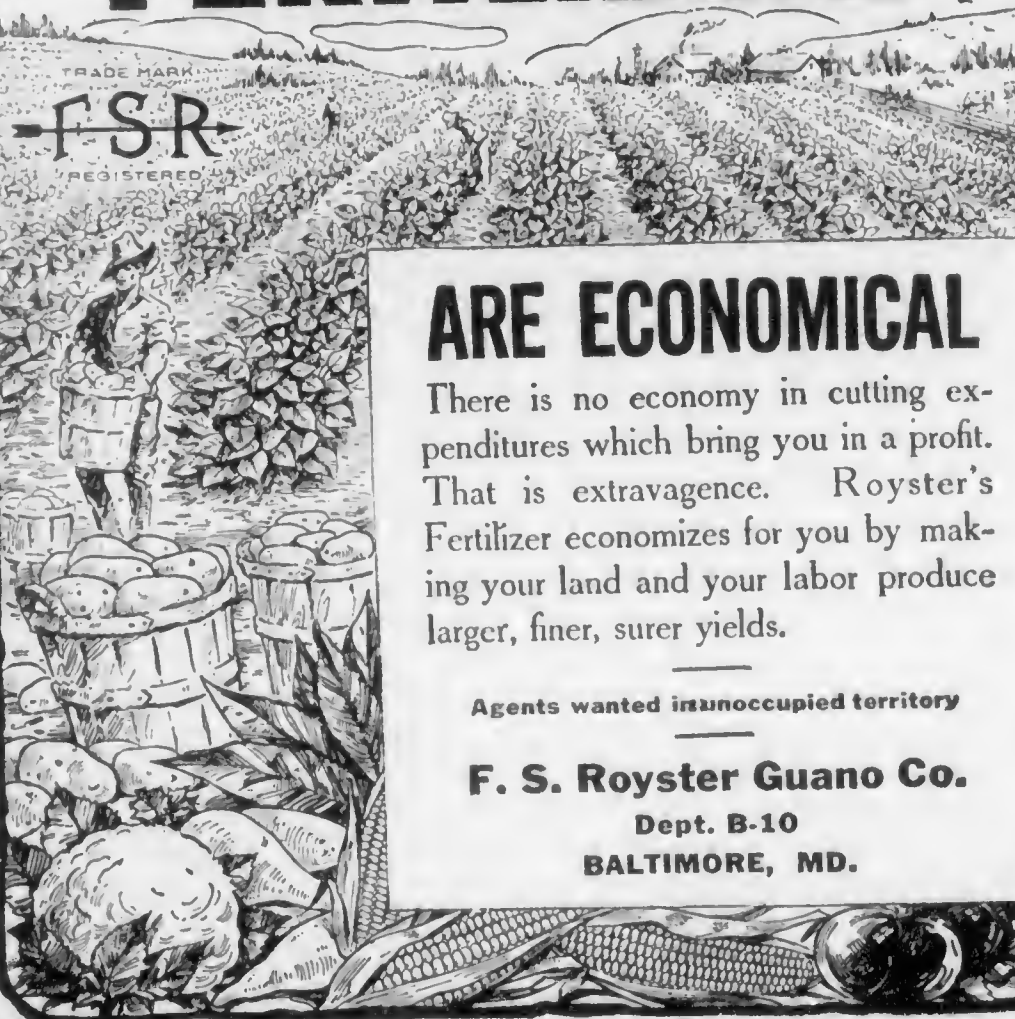
of irregular fields, and works up close to fences. And remember, it is equipped with Syracuse bottoms—good work insurance. Study your plowing conditions. Then go to your John Deere dealer and have him explain the Syracuse Two-Way Plow. You will find that it is just the plow you need to fill your requirements

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HORTICULTURE

Constructing a Hot Bed

THE possession of a hotbed is possible and practicable to any one who can handle a saw and hammer and is in possession of a few odd pieces of plank and an old window sash. About six weeks is usually saved by the use of a well constructed and properly cared for hotbed. The best location for the hotbed is on the south side of a building or high wall, where it will be exposed to the full warmth of the sun and protected from the west wind. The ground should slope away from the beds to afford the necessary drainage, and a warm loam is more desirable than a clay soil for this reason. When the soil of the location of the hotbed is unfavorable it should be removed entirely in digging the pit, and a more favorable soil—warm loam mixed with leaf mould, substituted in its place. The pit for the hotbed should be two or three feet deep, and three feet wide by six feet long is a convenient size for a single bed of two sashes. Any

serviceable hotbed sashes. A notched stick should be fixed to the side or front of the frame to hold the sash at any desired height when open. Stout strips of wood should extend from the front to the back of the frame, at the point where the sashes meet, for the edges to rest on.

The heat in a hotbed is, usually supplied by fermenting manure mixed with a quantity of straw or leaves which have been used as bedding. In choosing manure for the purpose, only that which has been gathered from grain-fed horses should be used.

Never use cold manure from a heap. The manure for the pit may be placed directly therein, packing it down sufficient to fill every corner and placing of the sash in position. If manure is in good condition and the day is bright, fermentation will begin at once, and as soon as the heat has penetrated every part of the mass it may be tramped down (very evenly) and the earth applied; but before putting on the earth a



Part of Horticultural Exhibit at New Jersey Products Show

sound plank or even inch stuff available may be used for the frame, which is constructed around corner posts of two or three-inch stuff. These posts should be long enough to rest on the bottom of the bit and extend a foot above ground at the front and about eighteen inches at the back. The frame need not necessarily extend more than two feet below the surface of the soil, unless the land is infested with moles and ground mice, in which case the boards had better extend to the bottom of the pit, and should be free from knotholes which will admit vermin, or if holes are unavoidable, they should be masked with pieces of tin. Nail the back, side and end boards to the upright posts securely. If four boards are used one of the end boards should be sawed in two diagonally, and one of these sections used for the top of each end, setting the straight edge down, the slanting edge forming the slanting side of the frame. Care should be taken in sawing the board to leave a straight and smooth edge so that the sash will fit evenly.

Old window sashes, providing they are sound and well glazed, make

A JERSEYMAN'S METHOD OF FORCING VEGETABLES

In my many years' experience as a market gardener the demand for earlier outdoor vegetables has seemed to increase from year to year, and in many cases a few days difference in time of maturity may mean the difference between loss and profit. The modern private or market gardener realizes this, for we see him trying to protect plants from sudden changes of weather by plowing loose soil as a temporary protection, or covering them with flower pots, Jer-

sey baskets, sheets of paper, or anything that comes handy. Many attempts have been made by vegetable growers to use individual plant frames in some form of wooden box with a pane of glass on top held in place by a stone. These always gave ideal results, as far as they went, which was really not very far. It took too long to make them; the cost was prohibitive; they were cumbersome; their use was limited to a few hills of low growing plants for home use. As a commercial proposition, they were out of the question.

Paper pots have been used extensively for starting seeds of cucumbers, cantaloupes, melons, lima beans and sugar corn, and have proved of great value in shortening the time required to mature these crops. With proper care and the use of hotbeds and cold frames one can have nice, vigorous plants all ready setting when congenial warm weather comes. After setting out these nice plants, when conditions seem to be perfect, and settled into summer, how often does it occur that in a day or two, before the plants have become accustomed to their new environment, a high, chilly wind comes up, buffets them around, makes them look sick, and lingers for days before they take on new life? We can't put them back again, yet they need protection. Such conditions often made me wonder whether planting the seed in the field in the first place would not have been better.

These disappointments made me renew my determination to discover some way of using that individual plant frame, for then I could have protection and cold frame conditions at any time. I had been using paper pots for several years with more or less success. They were of a good grade, mostly 3 1/2 inches square. The idea occurred to me, why not plant the seed direct in the open ground, cut the bottom out of the paper pot, place it over the hill and put a piece of glass over the top, and see what would be the result.

I put the paper pot on top instead of on the bottom, and dispensed with the cold frame. This paper pot used as a plant frame was in good condition, even after being exposed to the weather for several weeks. So I set to work and made larger and more substantial collapsible cardboard frames, coating them with paraffine wax as a waterproofing. A wire across the top and down the sides extending below the frame served to hold the glass in place, and also by pressing the wire into the soil it served as an anchor. Here I had something with all the advantages of the wooden individual plant frames, and none of its disadvantages; durable, portable, light, inexpensive and very simple. I made others on the same principle, but taller to accommodate tomatoes and other tall plants. These have the glass in front, on the south side, the largest being 18 inches high in the front. Watermelons and sugar corn seldom gain much as potted plants; they will not stand the change of replanting from cold frame to the open ground, even when weather conditions are favorable.

For the earliest planting of seeds of these vegetables, it is much better to plant them in their permanent quarters, the little cardboard boxes 4 1/2 inches square over each hill will force the crop at least two weeks earlier; they will be three or four inches high and ready for the first cultivation before other seeds planted same time are barely peeping out of the ground.

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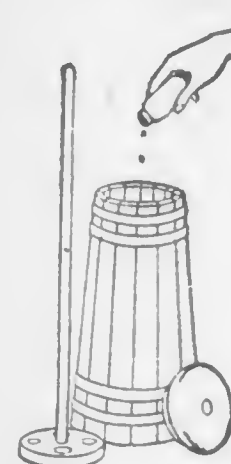
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Of Interest to Farm Women and Girls

Comparative Food Values

AT THE Home economics conference at the recent meeting of Pennsylvania State Grange the question of food value of milk and dairy products was under consideration when a man said he would like to hear about the food value of bread and potatoes and some of the other foods that we use. He remarked that he had recently heard the statement that "a pound of potatoes is equal in food value to eight eggs." This is one of the types of food comparisons that are very misleading.

To understand why let us consider just what this statement means and whether it covers the entire nutritive value of each food mentioned. When investigators began their study of foods, they thought that the chemical analysis of foods was all that is necessary in determining the nutritive value. By chemical analysis they determined the amount of protein or body-building material, the amount of carbohydrate (starch and sugar), amount of fat and of mineral matter in each kind of food.

When fuel is burned in an engine, heat is produced, also energy to do work. Food digested and used in the body machine produces the energy to do work and to maintain the heat of the body.

Food is Fuel to the Body

The chemical processes within the body, which make energy from food

available, are similar in nature to the processes which take place when fuel is burned in a stove. Since this is true, the fuel value of a food is determined by the amount of energy it yields to the body. This energy is calculated by measuring the amount of heat produced when the food is burned or digested in the body. A unit had to be determined for measuring the amount of heat produced when food is completely burned or assimilated. The unit chosen was called a calorie, which means heat. It is the amount of heat required to raise one pound of water (2 cups) four degrees Fahrenheit.

Pound of Potatoes vs. Eight Eggs

When we say that one pound of potatoes equals eight eggs in food value, we mean that a pound of potatoes when burned (digested) produces as much heat in the body as eight eggs.

But fuel or energy is not the only value of food.

(1) In addition to fuel, the body requires protein to maintain the muscle tissue. And children require more protein in proportion to their size than adults do in order to build up their growing muscles as well as to maintain their muscle tissues.

Let us compare potatoes and eggs as to their protein content. Potatoes have less than three per cent of their food value in the form of pro-

tein. This makes them practically negligible as a source of protein for the growth and maintenance of the muscle tissues.

Eggs, on the other hand, have about fourteen per cent of their food value in the form of protein. And the quality of egg protein ranks next best to that of milk for growth and repair of tissues. Hence, one of their special values is as a source of protein. Thus, you will readily see, a pound of potatoes cannot possibly equal eight eggs as a source of protein for making body tissues.

(2) The body requires mineral matter for building and repairing muscle issues, bone making, and for regulating the body processes, such as digestion, absorption, elimination of waste, etc. The regulation of the human machine corresponds to the oiling of an engine, or other machinery.

Potatoes and eggs have about the same amount of mineral matter, but the mineral matter differs in kind. Potatoes are valuable more particularly for the potash salts which they supply. Eggs, on the other hand, are especially valuable for the iron in which they are very rich. Potatoes afford practically no iron. Both contain other minerals in varying amounts. Iron is one of the minerals likely to be deficient in the diet unless foods known to be rich in it are



Milk to Drink, Custards to Eat, and Bread and Butter in Plenty Make Her Grow

(3) To maintain the general well-being of the body and, in the case of children, to favor normal growth, the body also needs certain other substances, which are called vitamins. There are three kinds of vitamins. One, called fat-soluble A because it dissolves and occurs in such fat as cream, when absent from the diet results in a characteristic eye disease and retarded growth of body. Another, called water-soluble B because it is dissolved and occurs in water in leafy vegetables, when absent from the diet results in a paralysis of the nerve system known as beriberi. The third vitamin, called the C vitamin, is also soluble in water, and is the corrective for scurvy.

Potatoes do not contain fat soluble A, but they do contain the water-

soluble B and C vitamins. Cooking, however, destroys in great measure the C vitamin.

Eggs and cream are the best sources of the fat-soluble A vitamin. They also contain water-soluble B. But they have only a small amount of the C vitamin, which occurs most in green vegetables and fruits.

Potatoes have a certain food value not afforded by eggs, in that they contain considerable fiber or woody matter, which is very essential to give bulk for proper intestinal action. Fiber is supplied by vegetables, cereals and fruits.

Thus, you will see why the food value of a food cannot be determined by its energy value alone.

One pound of potatoes may equal eight eggs in fuel or heat value, but that tells one nothing about the amount and quality of protein, nothing about the kind and amount of mineral matter, or the kind and amount of the three vitamins afforded by either potatoes or eggs.

And thus you will readily see that no two foods or classes of foods are equal in food value to one another. Each has its special food value and properties, and people must know how to select the foods that will meet the body needs. Therefore, in determining the value and place of a food in your diets, you must consider the following points:

(1) Does a food provide protein? If so, what is the quality of that protein? Just as steel makes a better knife than some other metals, so some kinds of protein are better adapted in the human digestion to making and maintaining muscle tissue. The milk and egg protein, next the meat proteins and lastly the vegetable proteins is the order of the adaptability of proteins in human nutrition.

(2) Does a food supply any or the right sort of mineral matter? It is especially necessary to know whether a food is rich or poor in lime, particularly in the case of children; also whether it contains phosphorus or iron, since these three minerals are likely to be lacking in the diet unless foods known to be rich in them are eaten.

(3) Does a food supply one or all of the three vitamins, which are so necessary in maintaining the general well-being of adults and growth of children?

(4) Does a food contain fiber?

(5) Does a food afford fuel, and if so, is it in the form of starch, sugar or fat? Starches, sugars and fats are interchangeable in the diet so far as furnishing heat and energy are concerned, but it is much better for the body health if starches and fats furnish a greater amount than sugars.

We would urge upon every one, particularly mothers and fathers, the necessity of informing themselves about the food values of the various foods, and of securing this information from reliable sources. Then you will know how to interpret such statements as the one that the gentleman at the Pennsylvania State Grange referred to, as quoted above. And you will know how to make the right selections and combinations of foods adequately to meet the requirements of your bodies and the demands upon them, and the needs of the bodies of your growing children.—Pearl MacDonald, Penna. State College.

The vinegar from the jar of pickled peaches or pears may be used for making boiled salad dressing. Such a dressing is particularly good on fruit salads.

THE NEW "IN-LAWS"

Most prospective brides feel a sort of sinking sensation as they contemplate meeting a crowd of ready-made relatives, and wonder apprehensively just what sort of reception they will get from the members of the bridegroom's family. The vulgar jokes about mother-in-law, the knowledge of unpleasantness in more than one family connection, the uncertainty as to the likes and dislikes of the various members, the lack of intimate association that would guard against blunders and all the other phantoms that rise up to take a little of the lustre off the days before and after the wedding ceremony make the girl a bit nervous and anxious. Men are different, and their lives are made up of bigger things, but the average prospective bride wants everything perfect and delightful in her home life and her dealings with her new relatives, at least for the first year or two until her wedded happiness is on a secure foundation.

First of all, if it can possibly be avoided, never live with the new relatives even for a brief period, and never make lengthy visits to them during the honeymoon. By that same sign do not expect your husband to want to live in your old home. A manly man wants to establish his own home from the first, and any marriage that views living with either family of the bride or bridegroom should be looked upon with suspicion, unless the parents simply cannot get along alone. There are occasions when the young couple must forego the pleasure of a separate establishment to take care of invalids, but that is a different proposition. The young folks who want to remain in her home or his to save money, or to have greater freedom to go about or to avoid responsibility to discover later that they have lost something very precious and vital out of their wedded existence, and nothing in later years can make it up to them. When duty demands living with elderly people then there can be no debate, but the normal, happily married young folks desire a separate home from the very first.

Frank, free, kindly treatment without affectation from the first is the only safe course in dealing with the new relatives. Some mothers-in-law are reserved and almost cold in their bearing, not because they dislike the newcomer, but because they are of that nature. The young woman who rumples up her mother-in-law's hair, sits in her lap, kisses her effusively and calls her pet names may be only doing what she has done with her own mother for years, but she had better find out first whether the home atmosphere in her husband's home is of the kind that makes a display of affection welcome. A well-bred, conservative attitude toward the young man's relatively will do much toward insuring future serenity and pleasant relations.

Too little intimacy at first rather than too much is wise, and there should ever be a lack of making a confidant of any new relative and telling home news. There are other topics of conversation and until a cordial, friendly everyday basis of affection is established between the bride and "his folks" she should refrain from retailing news of her old home or her new one. The entire absence of criticism on both sides will do much toward insuring future harmony.—Hilda Richmond.

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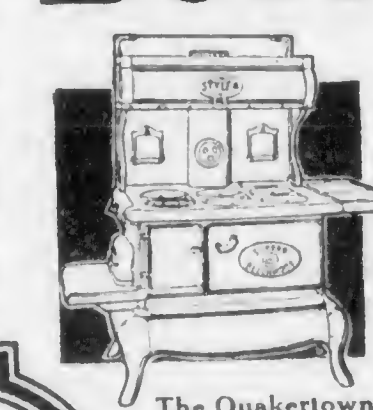
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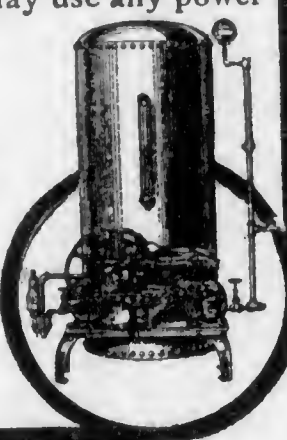
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TALKS WITH THE BOYS

EDITOR'S LETTER

To the Boys:

Several of the boys have told what they have raised or produced as their own. That is a very interesting thing and helps other boys to see what they might do also. Of course, a boy could not expect to spend all his time working for himself and board free at home, but every boy has or should have some spare time in which he could raise a calf or pig or some chickens; or, if he prefers, a crop of some kind.

There are several things to be learned in carrying on any kind of business. In the first place, a boy should read and study the best methods of doing the work he undertakes. He should read everything he can find on crops, feeds, fertilizers, cultivation, etc., which has a bearing on the thing he intends doing.

In the second place, he should learn to keep accounts with his work. On one page of an account book put "Dr." at the top. That means debtor. Put on that page all the cost of production such as labor, seeds, feed, fertilizer, etc. Then on the other page put "Cr." which means credit. After the work is finished and the product sold place here the amount received, or the market value in case you keep it.

The third thing to learn is to use wisely the money you get. Here is where we Americans fail mostly. We have no trouble making money but we have trouble keeping it. I do not mean that money should be hoarded, but we should learn how to get the most good out of it after we have it; that is, learn to spend it so that it will benefit and not harm us. But there is another lesson we Americans have not learned. We must learn not only to spend wisely, we must learn also to spend less than we make. There comes a time to most people when they cannot work and earn money, and unless they have put part of their money away as they made it they become objects of charity. It is said that more than half of the people above seventy years of age have to be supported by some one else, or by the public. So, saving is a much needed lesson.

Boys, I am afraid you will think this is not an interesting letter. Well, lots of things in life are not pleasant, but they are necessary. My experience teaches me that most farmers have not learned all the things I have mentioned in this letter, and it is my great desire that the young farmers will learn them while they are young so that they may get along better.

I would suggest that you join a Boys' Club of some kind. Write your County Agent if there is no club in your neighborhood and have him start one if possible. Then, when you write letters you will have something to tell that will help other boys.

We have a small farm of our own but do not live on it. We live nearby on a 66-acre farm, but also farm our own farm. I enjoy farming and hope to see more boys get interested in the boys' page of the Pennsylvania Farmer so that soon a whole page will be full.—S. F. S., Berks Co., Pa.

*Sincerely,
The Editor*

LETTERS FROM THE BOYS

Dear Editor—What was the matter with the boy's corner two weeks ago? I missed it, so thought I would write and help it along. I am a boy eight years old. I live on a farm 2 1/2 miles from State College. It is a very

pretty place, I go there quite often. Farmer's Week is a great time there; then we boys see every thing. I will be glad to tell the boys what I can of State College. I have no brothers or sisters so I help father and mother both. I love the farm. I raise ducks and help mother with the chickens. Last year I made \$22 out of my ducks. I go to school and am in the third grade. I have 22 head marks, and haven't missed a word in spelling in two years. I like to go to school and like my teacher. In the evenings I study and play games with father, mother and my Uncle Jim, who lives with us. We have great times. We have been having a fine time coasting. I think the boys' page is going to be great. I enjoy reading the boys' letters. Mother says it's almost as good as the household page but I think it's better, and if there isn't room for both every week, cut out the household page sometimes.

This is a pretty long letter but hope we will all be friends, and will hear from some of the boys next week.—Robert Glenn, Centre Co., Pa.

Dear Editor—I was surprised and delighted to find a boys' page in the Pennsylvania Farmer. My father has taken it several years and I have not seen the page before this year. I enjoy reading the whole page. I have a 22-caliber rifle but I do not shoot it much because I am only 11 years old. I expect to help in the sugar-bush this year. We have 500 trees.

My father owns 15 purebred Holstein cattle. Two years ago I went with my father to Philadelphia to attend a Holstein-Friesian meeting. The association took us down the Delaware River to Wilmington and out to the Dupont farm, Winterthur, and it was some farm.

I have one and a half miles to walk to school but we can shorten the distance by crossing the creek when the ice is on. I am in the seventh grade. I have one sister older and one younger than myself. I have no brothers, so I have to work quite hard.—Leon Palmer, Bradford Co., Pa.

Dear Editor—I certainly am glad that the Pennsylvania Farmer has some space for a boys' page which I enjoy reading. I am fourteen years old and live on a farm. I have two brothers, one older than I, and one younger. The oldest one works in the city and the other one and I are at home. We do a little trapping in winter and also raise Flemish hares. I save all the money from the furs and hares and put it in the bank.

We have a small farm of our own but do not live on it. We live nearby on a 66-acre farm, but also farm our own farm. I enjoy farming and hope to see more boys get interested in the boys' page of the Pennsylvania Farmer so that soon a whole page will be full.—S. F. S., Berks Co., Pa.

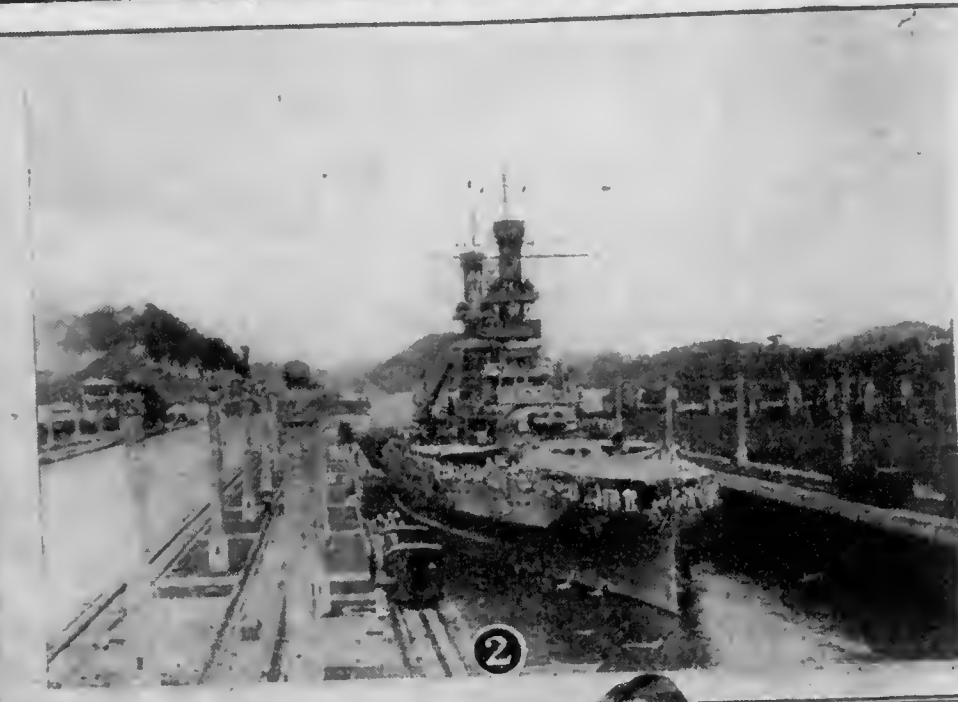
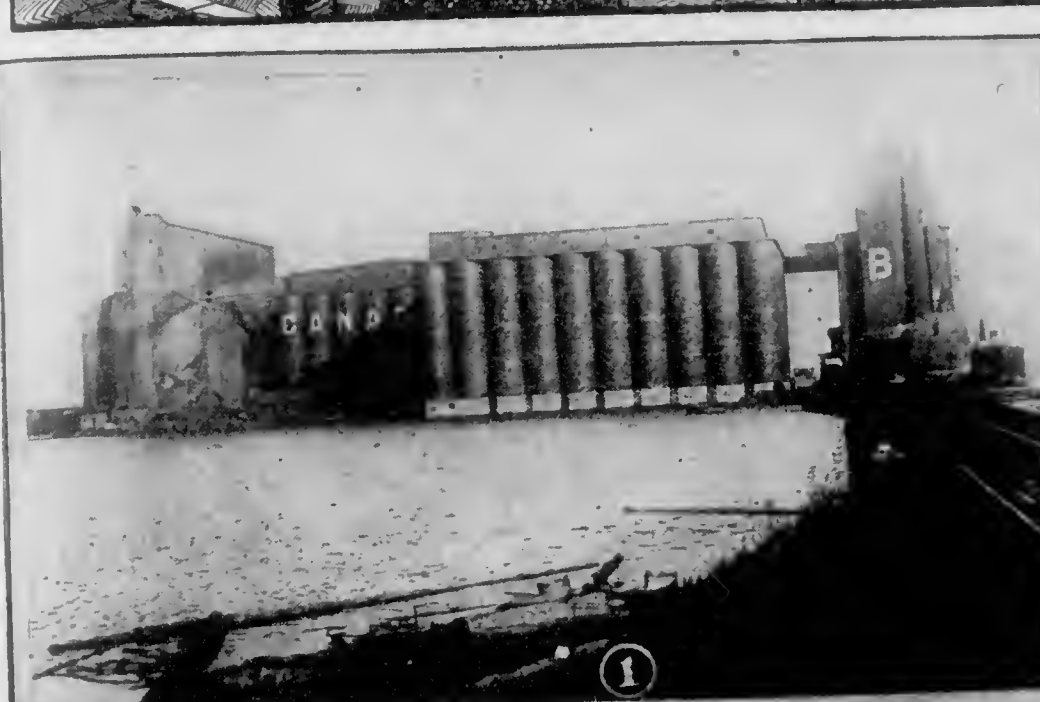
He Feels Just "So-so"

First Class—I got a frightful stitch in my side at the rally the other day.

Second Class—Yes, that's the worst of being "hemmed" in by the crowd.

Few fathers are ever forgiven by their sons for not saving when they were young.

PASSING EVENTS IN PICTURES



1—The Largest Grain Elevator in the World, is located at Port Arthur, Ont., Canada.
2—The Atlantic Fleet passing thru the Panama Canal for Battle Maneuvers off the Pacific Coast.
3—Pat Walsh, the famous Monkey-man, can turn himself into a Monkey in 10 minutes. A glove-tight suit and a False Head and Feet make him look exactly like a Monkey.

4—Capt. Ewyer (right) overtaking Capt. Price of the Long Branch Ice Boat & Yacht Club on the Shrewsbury River trials.
5—Snedeker, Cornell's artificial legged wrestler (right), grappling with Bishop, of Pennsylvania; the handicapped man was beaten.
6—Pres.-elect Harding greets Baltimore Baby just before he left St. Augustine, Fla., in

Senator Frelinghuysen's Houseboat.
7—This remarkable Clock, made of straw, took a Shoemaker of Strassburg, Alsace, fifteen years to complete.
8—Shows "Black Beauty," weight 18 pounds, said to be largest Rooster in World, and a one-pound Bantam.
9—Four of the Boy Carpenters awarded Prizes for their displays of Bird Houses.



The Voice of the Pack

by Edison Marshall

CHAPTER IX

THE Lennox house seemed very silent when, almost an hour later, Dan turned his horse into the corral. He had rather hoped that Snowbird would be at the door to meet him. The darkness had just fallen, and all the lamps were lighted. He strode into the living-room, warning his hands an instant beside the fireplace. The fire needed fuel. It had evidently been neglected for nearly an hour.

Then he called Snowbird. His voice echoed in the silent room, unanswered. He called again, then went to look for her. At the door of the dining-room he found the note that she had left for him.

It told, very simply and plainly, that her father lay injured in his bed, and he was to remain and do what he could for him. She had gone for help to the ranger station.

He leaped thru the rooms to Lennox's door, then went in on tiptoe. And the first thing he saw when he opened the door was the grizzled man's face on the pillow.

"You're home early Dan," he said. "How many did you get?"

It was entirely characteristic. Shaggy old Wolf is too proud to howl over the wounds that lay him low, and this gray old bear on the bed had partaken of his spirit.

"Good Lord," Dan answered. "How badly are you hurt?"

"Not so bad but that I'm sorry that Snowbird has gone drifting twelve miles over the hills for help. It's dark as pitch."

And it was. Dan could scarcely make out the outline of the somber ridges against the sky.

They talked on, and their subject was whether Dan should remain to take care of Lennox, or whether he should attempt to overtake Snowbird with the horse. Of course the girl had ordered him to stay. Lennox, on the other hand, said that Dan could not help him in the least, and decided him to follow the girl.

"I'm not often anxious about her," he said slowly. "But it is a long walk thru the wildest part of the Divide. She's got nothing but a pistol and a lantern that won't shine. Besides—I have had bad dreams."

"You don't mean—" Dan's words came hard—"that she's in any danger from the animals—the cougars—or the wolves?"

"Barring accidents, no. But, Dan, I want you to go. I'm resting fairly easily, and there's whisky on the table in case of a pinch. Someway—I can't bar accidents tonight. I don't like to think of her on those mountains alone."

And remembering what had lain beside the trail, Dan felt the same. He had heard, long ago, that any animal that has once tasted human flesh loses its fear of men and is never to be trusted again. Some

animal that still hunted the ridges had, in the last month, done just that thing. He left the room and walked softly to the door.

The night lay silent and mysterious over the Divide. He stood listening. The girl had started only an hour before, and it was unlikely that she could have traversed more than two miles of the steep trail in that time. He could fancy her toiling ever upward, somewhere on the dark ridge that lay beyond. Altho the horse ordinary did not climb a hill more swiftly than a human being, he didn't doubt but that he could overtake her before she went three miles farther. But where lay his duty—with the injured man in the house or with the daughter on her errand of mercy in the darkness?

Then the matter was decided for him. So faint that it only whispered at the dim, outer frontiers of hearing, a sound came pricking thru the darkness. Only his months of listening to the faint sounds of the forest, and the incredible silence of the night enabled him to hear it at all. But he knew what it was, the report of a pistol. Snowbird had met an enemy in the darkness.

He called once to Lennox, snatched the shotgun that still stood where he had placed it in the corner of the room, and hastened to the corral. The mare whickered plaintively when he took her from her food.

CHAPTER X

Even in the darkest night, there is one light that never brings hope or cannot lead. It is not a twinkling, joyous light like that mysterious will-o'-the-wisp that now and again has lured travelers into the marshes to their death. Nor can any one ever mistake it, or be soothed and cheered by it. It always appears the same way—two green circles, close together, in the darkness.

When Snowbird first heard the step in the thickets beside her, she halted bravely and held her lantern high. She understood at last. The very extremity of the beams found a reflection in two very curious circles of greenish fire: a fire that was old upon the world before man ever rubbed two sticks together to strike a flame. Of course the dim rays had simply been reflected in the eyes of some great beast of prey.

She identified it at once. Only the eyes of the felines with vertical pupils, have this identical greenish glare. The eyes of the wolves glow in the darkness, but the circles are usually just bright points. Of course it was a cougar.

She didn't cry out again. Realizing at last the reality of her peril, her long training in the mountains came to her aid. That did not mean she was not truly and terribly afraid. The sight of the eyes of a hunting animal in the darkness calls up memories from the germ-plasm—deep-buried horrors of thousands of generations past, when such lights glowed all about the mouth of the cave. Besides, the beast was hunting her. She couldn't doubt this fact. Curiosity might make a lion follow her, but it would never beget such a wild light

of madness in his eyes as this she had just seen. Only the frenzied pulse of wild blood thru the fine vessels of the corneas could occasion such a glow as this. She simply clamped down all her moral strength on her rising hysteria and looked her situation in the face. Her hand flew instinctively to her side, and the pistol leaped in the lantern light.

But the eyes had already blinked out before she could raise the weapon. She shot twice. The echoes roared back, unbelievably loud in the silence, and then abruptly died; and the only sound was a rustling of leaves as the cougar crouched. She sobbed once, then hurried on.

She was afraid to listen at first. She wanted to believe that her pistol fire would frighten the animal from her trail. She knew, under ordinary conditions, that it would. If he still followed, it could mean but one thing—that some unheard-of incident had occurred to destroy his fear of men. It would mean that he had knowingly set upon her trail and was hunting her with all the age-old remorselessness that is the code of the mountains.

For a little while all was silence. Then out of the hush the thicket suddenly crashed and shook on the opposite side of the trail. She fired blindly into the thicket. Then she caught herself with a sob. But two shells remained in her pistol, and they must be saved for the test.

Whisperfoot, the cougar, remembering the lessons of his youth, turned from the trail when he had first heard Snowbird's step. He had crouched and let her pass. She was walking into the wind; and as she was at the closest point a message had blown back to him.

The hair went straight on his shoulders and along his spine. His blood, running cold an instant before from fear, made a great leap in his veins. A picture came in his dark mind: the chase for a deer when the moon had set, the stir of a living thing that broke twigs in the thickets, and the leap he had made. There had been blood, that night—the wildness and the madness and the exultation of the kill. Of course there had been terror first, but the terror had soon departed and left something lying warm and still in the thickets. It was the same game that walked his trail in front—game that died easily and yet, in a vague way he did not understand, the noblest game of all. It was living flesh, to tear with talon and fang.

All his training, all the instincts imbedded in him by a thousand generations of cougars who knew this greatest fear, were simply obliterated by the sudden violence of his hunting-madness. He had tasted this blood once, and it could never be forgotten. The flame leaped in his eyes. And then he began to stalk.

A cougar, trying to creep silently on its game, does not move quickly. It simply steals, as a serpent steals thru the grass. Whisperfoot stalked for a period of five minutes, to learn that the prey was farther away from him at every step.

He trotted forward until he came close, and again he stalked. Again he found, after a few minutes of silent creeping thru the thickets, that he had lost distance. Evidently this game did not feed slowly, like the deer. It was to be a chase then. Again he trotted within one hundred feet of the girl.

Three times more he tried to stalk before he finally gave it up altogether. This game was like the porcupine—simply to be chased down and taken. As in the case of all animals

that hunt their game by overtaking it, there was no longer any occasion for going silently. The thing to do was to come close and spring from the trail behind.

Though the fear was mostly gone, the cougar retained enough of that caution that most wild animals exhibit when hunting a new game so that he didn't attempt to strike Snowbird down at once. But as the chase went on, his passion grew upon him. Ever he crept nearer. And at last he sprang full into the thickets beside her.

At that instant she had shot for the first time. Because the light had left his eyes before she could find aim, both shots had been clean misses. And terrible as the reports were, he was too engrossed in the chase to be frightened away by mere sound. This was the cry the man-pack always made—these sudden startling sounds in the silence. But he felt no pain. He crouched a moment, shivering. Then he bounded on again.

The third shot was a miss too; in fact, there had been no chance for a hit. A sound in the darkness is as unreliable a target as can possibly be imagined. And it didn't frighten him as much as the others.

Three times he crouched, preparing for a spring, and three times his tawny tail began that little up-and-down motion that is always the warning before his leap. But each time, as he waited to find his courage, the game had hurried on.

Now she had her back to a tree and was holding the lantern high. It glinted on his eyes. And the fourth time she shot, and something hot and strange singed by close to his head. But it wasn't the pain of one quill from a porcupine, and it only increased his anger. He waited, crouching and the girl started on.

She was making other sounds now—queer, whimpering sounds not greatly different from the bleat that the fawn utters when it dies. It was a fear-sound, and if there is one emotion with which the wild beasts are acquainted, in all its phases, it is fear. She was afraid of him then, and that meant he need no longer be in the least afraid of her. His skin began to twitch all over with that terrible madness and passion of the flesh-hunters.

This game was like the deer, and the thing to do was to lie in wait. There was only one trail. He was simply following his instincts, not conscious intelligence, when he made a long circle about her and turned back to the trail two hundred yards in front. He wasn't afraid of losing her in the darkness. She was neither fleet like the deer nor courageous like Wolf, the bear. He had only to wait and leap from the darkness when she passed.

And because this was his own way of hunting, because the experience of a thousand generations of cougars had taught him that it was the safest way, that even an elk may be downed by a surprise leap from ambush, the last of his fear went out of him. The step drew nearer and he knew he would not again be able to give his stroke.

When Dan Failing, riding like mad over the mountain trail, heard the third shot from Snowbird's pistol, he felt that one of the debts he owed had come due at last. He wanted to know, as the darkness pressed around him, that he was to be killed in the fire. And the horse staggered beneath him as he tried to locate

He showed no mercy to his mount. Horseflesh isn't made by carrying a heavy man over such a trail as this,

and she was red-nostriled and lathered before half a mile had been covered. He made her leap up the rocks, and on the fairly level stretches he loosed the reins and lashed her into a gallop. Only a mountain horse could have stood that test.

To Dan's eyes, the darkness was absolute; yet she kept straight to the trail. He made no attempt to guide her. She bounded over logs that he couldn't see, and followed turn after turn without ever a misstep.

He gave no thought to his own safety. His courage was at the test, and no risk of his own life must interfere with his attempt to save Snowbird from the danger that threatened her. He didn't know when the horse would fall with him and precipitate him down a precipice, and he was perfectly aware that to crash into a low-hanging limb of one of the great trees beside the trail would probably crush his skull. But he took the chance. And before the ride was done he found himself pleading with the horse, even as he lashed her sides with his whip.

The lesser forest creatures sprang from his trail; and once the mare leaped high to miss a dark shadow that crossed in front. As she caught her stride, Dan heard a squeal and a rattle of quills that identified the creature as a porcupine.

By now he had passed the first of the worst grades, coming out upon a long, easy slope of open forest. Again he urged his horse, leaving to her keen senses alone the choosing of the path between the great tree trunks. He rode almost in silence. The deep carpet of pine needles, wet from the recent rains, dulled the sound of the horse's hoofs.

Then he heard Snowbird fire for the fourth time; and he knew that he had almost overtaken her. The report seemed to smash the air. And he lashed his horse into the fastest run she knew—a wild sobbing figure in the darkness.

"She's only got one shot more," he cried. He knew how many bullets her pistol carried; and the danger whatever it was—must be just ahead. Underbrush cracked beneath him. And then the horse drew up with a jerk that almost hurled him from the saddle.

He lashed at her in vain. She was not afraid of the darkness and the rocks of the trail, but some Terror in the woods in front had in an instant broken his control over her. She reared, snorting; then danced in an impotent circle. Meanwhile, precious seconds were fleeing.

He understood now. The horse stood still, shivering beneath him, but would not advance a step. The silence deepened. Somewhere in the darkness before him a great cougar was waiting by the trail, and Snowbird, hoping for the moment that it had given up the chase, was hastening thru the shadows squarely into the ambush.

Whisperfoot crouched lower; and again his long serpent of a tail began the little vertical motion that always precedes his leap. He had not forgotten the wild rapture of that moment he had inadvertently sprung on Landy Hildreth—or how, after his terror had died, he had come creeping back. He hunted his own way, waiting on the trail; and his madness was at its height. He was not just Whisperfoot the coward, that crouched in the shadow of a tall form in the thickets. The consummation was complete, and that single experience of a month before had made of him a hunter of men. His muscles

set for the leap.

So intent was he that his keen senses didn't detect the fact that there was a curious echo to the girl's footsteps. Dan Failing had slipped down from his terrified horse and was running up the trail behind her, praying that he could be in time.

Snowbird heard the pat, pat of his feet; but at first she did not dare to hope that aid had come to her. She had thought of Dan as on the far-away marshes; and her father, the only other living occupant of this part of the Divide, might even now be lying dead in his house. In her terror, she had lost all power of interpretation of events. The sound might be the cougar's mate, or even the wolf pack, jealous of his game. Sobbing, she hurried on into Whisperfoot's ambush.

Then she heard a voice, and it seemed to be calling to her. "Snowbird—I'm coming, Snowbird." A man's strong voice was shouting. She whirled with a sob of thankfulness.

At that instant the cougar sprang. Terrified though she was, Snowbird's reflexes had kept sure and true. Even as the great cat leaped, a long, lithe shadow out of the shadow, her finger pressed back against the trigger of the gun. She had been carrying her gun in front of her, and she fired it. This last time, with no conscious effort. It was just a last instinctive effort to defend herself.

One other element affected the issue. She had whirled to answer Dan's cry just as the cougar left the ground. But she had still been in range. The only effect was to lessen, in some degree, the accuracy of the spring. The bullet caught the beast in mid-air; but, even if it had reached its heart, the momentum of the attack was too great to be completely overcome. Snowbird only knew that some vast, resistless power had struck her, and that the darkness seemed to roar and explode about her.

Hurled to her face in the trail, she did not see the cougar sprawl on the earth beside her. The flame in the lantern almost flicked out as it fell from her hand, then flashed up and down, from the deepest gloom to a vivid glare with something of the effect of lightning flickering in the sky. Nor did she hear the first frenzied thrashing of the wounded animal. Kindly unconsciousness had fallen, obscuring this and also the sight of the great cat, in the agony of its wound, creeping with broken shoulder and bared claws across the pine needles toward her defenseless body.

But the terrible fangs were never to know her white flesh. Someone had come between. There was no chance to shoot; Whisperfoot and the girl were too near together for that. But one course remained; and there was not even time to count the cost. In this most terrible moment of Dan Failing's life, there was not even an instant's hesitation. He did not know that Whisperfoot was wounded. He saw the beast creeping forward in the weird dancing light of the fallen lantern, and he only knew that his flesh, not hers, must resist its rending talons. Nothing else mattered. No other considerations could come between.

It was the test; and Dan's instinct prompted coolly and well. He leaped with all his strength. The cougar bounded into his arms, not upon the prone body of the girl. And she opened her eyes to hear a curious thrashing in the pine needles, a strange grim battle that, as the lantern flashed out, was hidden in the darkness.

And that battle, in the far reaches

A Story for Children

Johnny's Mistake



Johnny Turned and Ran as Fast as He Could

For two weeks, Grandpa and Johnny worked patiently with Billy and at last Johnny was allowed to drive him alone. Mr. Brown kept telling John-

ny not to get angry and tease Billy, on the farm for two weeks and he for he had a very bad temper. So was beginning to get lonely. He far, Johnny had done very well. He had done everything he could think of during that time—gather the eggs, watch the cows, feed the chickens, and dozens of other things that were very interesting at first. Now he was looking for something new to do.

"Gr-and-pa! Hi! Gr-and-pa!" he called, running out of the house. "Here!" boomed back Grandpa. Brown's big voice.

Johnny went into the big red barn where Mr. Brown, his grandpa, was trying to conceal something white, back of himself.

"What's that white thing you're trying to hide?" inquired Johnny curiously.

"Do you really want to know?" Grandpa. "Well, it's a billy-goat! I got him for you to play with. Your father wrote and said you could stay the rest of the summer so I got him for you to drive."

"Oh, goody! goody!" cried Johnny, jumping up and down. "Let's drive him, right away."

"Not so fast there, young man," warned Grandpa Brown as Johnny sprang towards his new playmate. "You'll have to be very careful or maybe you won't like him so well. If he gets mad, I'm afraid little Johnny would not stay on his feet very long."

"Oh, I'll be so careful, and won't it be heaps of fun? It will be just like having a horse—but I have no wagon."

Mr. Brown silently pointed to a shiny little green wagon in the corner and in the wagon was some beautiful new harness with red trimmings.

"Oh-h-h," was all Johnny could say.

of the Divide, passed into a legend. It was the tale of how Dan Failing, his gun knocked from his hands as he met the cougar's leap, with his own unaided arms kept the life-giving breath from the animal's lungs and killed him in the pine needles. Claw and fang and the frenzy of one death could not matter at all.

Thus Failing established before all men his right to the name he bore. And thus he paid one of his debts—of his life, as the code of the frontier has always decreed—and in the fire of danger and pain his metal was tried and proven.

(Continued Next Week).

Blame the Driver

He tried to walk across the street with his legs, light his pipe with his hands and mouth, see a pretty girl with his eyes and think about his errand with his brain, all at one and the same time. And now he ain't.

ny not to get angry and tease Billy, on the farm for two weeks and he for he had a very bad temper. So was beginning to get lonely. He far, Johnny had done very well. He had done everything he could think of during that time—gather the eggs, watch the cows, feed the chickens, and dozens of other things that were very interesting at first. Now he was looking for something new to do.

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Give a mean man a little authority and his meanness will rise to the surface like scum on a frog-pond.

The early bird catches the worm and turns it into profit.

Inside of a week the whole town was talking about Ephraim Brown's new Andes Furnace



"Going to break a rule for once and put some exclamation points in this letter."

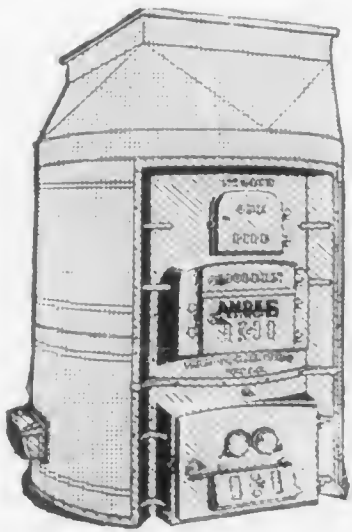
THE first we knew about the big stir that Ephraim Brown's Andes One Pipe had made was this letter: "Dear Phillips & Clark, that Andes One Pipe Furnace I put in is a crackerjack! The house is just as warm and comfortable as can be, day and night, and we've had some mighty cold weather out in this town the last few days. It's fine. And I can see already that it's saving fuel money for me. You never had a better booster in any town than I am right now . . ."

Mr. Brown was right. We never did have a better booster. He must have talked about his Andes to almost everyone in town. We found out that he even gave a party to show it off. He had an advantage over us because he could *show* people what we had been trying to *tell* them. We knew all along that the Andes was a guarantee of warm, healthful, economical heat. We knew that putting in an Andes was like opening your door to a flood of warm, summer sunshine. But all Mr. Brown had to do, when he met a neighbor who complained about his poorly heated home, was to take him home and let him *feel* the good, satisfying heat his Andes was giving.



"Cold? Why my house is just like summertime. Come in and I'll show you my Andes Furnace."

You can imagine how it would be. A freezing winter day after a night of bitter frost and raging wind; cold enough to freeze the marrow in your bones. And then you *feel* the heat of the Andes. What a contrast to find a house cozy and warm as toast in every room while yours is full of draughts and chilly corners, and your family wearing sweaters and sitting close to the stove.



"The Andes saves fuel money."

ANDES
SYSTEM
ONE PIPE FURNACE
"Better Heating for Less Money"

PHILLIPS & CLARK STOVE COMPANY, Inc.
Dept. P Geneva, New York

Makers also of the famous Andes Stoves and Ranges

Phillips & Clark Stove Company, Inc.,
Dept. P Geneva, N. Y.

Gentlemen:

I am interested in saving fuel money. Please send me your free, illustrated booklet called "Better Heating for Less Money."

NAME

ADDRESS

STATE

2

Now you take an Andes. You can put it in complete and have a fire in it and have a warm house, warm all over, inside of twenty-four hours. Just think of it — getting rid of all the discomfort of cold weather inside of only twenty-four hours. It's the greatest advance ever made in heating appliances, because it not only goes in easily and quickly with no expense or confusion of ripping open walls or floors to put in heat pipes, but it also often saves from one-third to one-half of the amount of fuel you formerly burned. It's a money-saver and it gives you the heat comfort you always wanted.

Letters are coming to us every day from people who have at last found winter heat comfort. For instance, on this page there is a picture of Mr. Frank Fraleigh's house in Rhinebeck, N.Y. Mr. Fraleigh says:

"Gentlemen — F. Rosencranz installed one of your Andes One Pipe Furnaces, No. 210, in my house of six rooms and bath. It has done more than the work of two stoves, and we are well pleased with it."



"In this house is a money-saving Andes."

The water pans in the Andes hold eight gallons of water with evaporating surface five times larger than in any other furnace. They are low down where the water can't get hot enough to boil. As a result no steam comes up into the rooms and the air takes up only the natural amount of water which guards your health.

We guarantee the Andes in this way, if you are not perfectly satisfied with your Andes it will be taken out and the full purchase price returned to you. Write us for a copy of our free book, "Better Heating for Less Money."



Use this coupon to send for free book.



"Come right in everybody where it's warm."

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Modern Schools For Country Children

The First of a Series of Articles on Consolidated Schools—By R. P. Crawford

(Editor's Note—This is the first of a series of five articles dealing with consolidated rural schools written for the Pennsylvania Farmer. The author has traveled approximately 10,000 miles studying the best rural schools in America and gathering material for these articles. He is recognized as an authority on this subject.)

GOOD-BYE to the one-room school. It is a sad farewell for many of us, but a happy one for others. Fifty thousand of the little red and white buildings that once dotted the landscape of the open country are no more, or with barred windows suggest that they no longer are the scenes of readin', writin' and 'rithmetic, emphasized by liberal applications of the hickory stick. Instead the boys and girls go to fine up-to-date buildings, every bit as good as their city cousins, riding in automobile busses, a thing which not so many years ago would have been thought impossible.

Those of us who live in states where the consolidated school is a new development would find the progress that has been made in many of our more fortunate states almost incredible and indeed difficult to believe. Indiana has more than 1000 of these new kind of schools, Ohio more than 900, Iowa more than 400 consolidated schools either erected or under construction, and Minnesota more than 300, while Colorado notwithstanding the mountainous character of that state, has more than 100 such schools. About 50,000 of the little one-room schools have been abandoned the country over to make room for the 12,000 fine modern buildings, in which these boys and girls receive high school educations, just as good as the city boys and girls.

It does not necessarily follow that these consolidated schools are located in town. A very large number of them are set right out among the farms. In a great number of cases the people in the tiny villages and the surrounding country have gone together and erected a school, thereby securing educational facilities far better than could have been obtained if they had each maintained their own schools. In practically no cases are consolidated schools located in towns or cities of any considerable size.

It does not necessarily follow that in every case a consolidated school should be erected and one-room schools abandoned, but in thousands of places in the state and in the surrounding states such schools afford practically the only solution of giving the country boys and girls an adequate education.

Iowa's Remarkable Development

Iowa is remarkable in the de-

velopment of consolidated schools. It took approximately seventeen years for Iowa to secure its first seventeen consolidated schools, but it took only six years to secure the next 300. During the last school year approximately one new consolidated school district was formed for every day the schools of the state were in session. In that state, approximately 3000 one-room rural

schools have been closed, and more than 50,000 children are being transported every day to consolidated schools.

Those who are acquainted with only the little one-room schools would certainly be amazed at many of the modern school buildings in Iowa. The first place that we shall visit will be the Orange township community near Waterloo, Iowa. Here is found not only a fine consolidated school, but also perhaps one of the most elaborate country churches in the United States, and a community life and development that is remarkable. Probably the Orange township school is one of the most imposing country schools to be found anywhere. It is set well back from the roadway with five acres of grounds, well laid out in front with shrubbery and trees. The school building was erected in 1916 at a cost of \$52,000. Then a home for the janitor was also erected nearby at a cost of \$2,000, and more recently a house for the superintendent was completed at a cost of \$4,000. When I visited this school some months ago, there were 244 students enrolled. Out of this number seventy were enrolled in high school. Before the consolidated school was established there were ten little country schools with a total enrollment of 140. There was no high school work offered in the township either, and perhaps only fifteen or twenty boys would leave the township each year for further education. The school district itself embraces thirty-eight sections and twelve busses are used for transportation. High school boys furnish teams and are employed as drivers at salaries from \$50 to \$75 a month.

Community Spirit Important

The community spirit that prevails in this township is one of its remarkable features. The school house is in use nearly every night in the week for some community entertainment or meeting.

The community literary society meets every Friday and everyone takes part in the program. The Orange township band of thirty pieces is an important organization. The last day of school, even when the district schools were in operation, has always been made an important celebration, with picnic dinner, games for adults and children, and the baseball game. Each fall the harvest picnic is held on the banks of some stream, when the men and older boys teach the younger boys to swim. This country township has its own Fourth of July celebration, thereby keeping its young people at home. Here there is also a community banquet when new-



One of the 50,000 One-room Schools Abandoned



Consolidated School Located in the Village of Jesup, Iowa

comers are the guests of the others. Of course, the church plays an important part in community life. It was erected a few years ago at a cost of approximately \$40,000. It is heated by steam, lighted by electricity, and has an air pressure water system with hot and cold water throughout the building. There is a well-equipped kitchen, large dining room, twenty small individual Sunday School rooms and a rest room where the little children are cared for during the church service. The church has about 300 members, and the average attendance at the morning service is about 350, and at the evening services about 200.

This township is remarkable in that farmers when they retire, instead of moving to town, buy a little acreage near the church and school and settle down there. Along the country road, one will see a row of fine, modern homes, comparing favorably with any in a city, but it is in no sense a town, since there are no stores or places of business. It is simply a little country community. The teachers in the school never have trouble finding boarding places, because the homes are always open to them. The story of these other features of Orange township community life is told here, because it shows what can be accomplished in connection with a consolidated school.

Readers who would like to know just how good a village school may be are invited to take a little trip with us to the other side of Waterloo, Iowa, and visit the consolidated school in the village of Jesup. It is an unusually fine building, the total cost of which, including building, ground, and equipment was \$110,000. Here there are about 400 pupils in attendance, half coming from the country and half from the village. Approximately forty-eight sections are embraced in this consolidation and eleven one-room schools were abandoned.

The school grounds embrace approximately eight acres, furnishing a splendid setting of grass and trees for the school building. The building itself has an extreme length of 159 feet, and a depth of 98 feet. A very noticeable feature is the wide corridors, approximately sixteen feet wide. The building has three floors, the lowest floor being nearly level with the ground. The first floor takes care of the two lower grades, the manual training department, the gymnasium, the shower baths and locker rooms, and a lunch room off of the gymnasium. On the main floor are grade rooms, and quarters for the agricultural department and sewing room. On the third floor is a model housekeeping suite consisting of kitchen, dining room and bedroom. There is a tile bathroom off of the bedroom. The dining room has a fireplace in it. The kitchen is equipped with a large gas range and a built-in refrigerator. There is also a dumbwaiter running to the lowest floor so that some things may be cooked upstairs and sent down to the lunch room. The idea here is to give girls practical experience in keeping up a home of their own. On this floor is also a suite of rooms for the various science departments. There are also four recitation rooms on this floor. The school is provided with a good auditorium, opening out into the corridors, and as many as 650 people have been accommodated at one time.

In fact, one might say that this school building is equipped as well as any city building in every particular. There are telephones connecting the office with every room, a large vacuum cleaning plant in the basement, and a clock system with clocks in every room operated by one central clock. Outside the building there is a covered driveway so that the children can be unloaded from the busses in stormy weather without getting wet.

Cost of Running Schools

Professor Macy Campbell of the Iowa State Teachers' College at Cedar Falls, completed a very interesting study of the Orange township and the Jesup schools just mentioned. He first found that the cost of one hour of schooling under the immediate direction of a teacher in the 100 rural schools of Black Hawk county was 27 cents per

pupil per hour. In the Orange township school the cost was 18 cents per pupil per hour, and the Jesup school 24 cents. The tax levy for the running expenses of the Jesup school was 23 mills and for the Orange township 23.3 mills. The tax levy for the running expenses of the 100 one-room schools in that county average 11.6 mills, while the levy for the Waterloo city school was 32.2 mills. Consequently it will be seen that the consolidated schools cost more money than the one-room school, but are really cheaper when one takes into consideration what one gets for his money. Even at that, the country people get off with a smaller tax than in the city. If a farmer was offered twenty acres of stump-covered, marshy land for \$1000 and twenty acres of the best land in the world for \$2000, he would probably buy the latter, and call it a bargain. The same thing is true with schools, and Iowa farmers seem to be finding it out.

However, just because the schools we have described are elaborate and represent a good-sized investment, it does not necessarily follow that all consolidated schools have to be large and imposing buildings. There are a number of splendid examples of country schools in the state of Iowa where good types of brick buildings have been erected in the open country at a cost of \$20,000 to \$25,000. These schools are especially desirable where it is not advisable to tie up a large amount of money. We shall visit two such schools.

Five miles north of the town of Alta, Iowa, is the Fairview consolidated school. Buena Vista county, in which this school is located, has numerous splendid consolidated schools, and this



A Country School near Alta, Iowa, Where a Winter Course is Conducted for Farmers

school is only representative of number of others. In fact, approximately three-fourths of this county is consolidated. The Fairview school is a good type of small open-country consolidated school. Thirty-four sections are embraced in the new district and ten or eleven schools were abandoned in 1915 when this school was built. There are approximately 100 students enrolled in the school and about a fifth of these are in the high school. The building, a small two-story structure, cost about \$25,000. On the first floor is a large assembly room, domestic science room, and rooms for manual training and agriculture. On the second floor are five classrooms. The building is heated with steam and a pressure water system is provided. Near the school is an eight-room modern home provided for the five teachers free of charge. The expenses of running this school are between \$12,000 and \$15,000 a year. The cost of operating the seven bus routes is between \$650 and \$700 a month.

A unique feature of this school is a three months' short course in the winter for farmers and farm boys who have left school and desire to do some extra work during the winter months. During one winter, for instance, a week was devoted to traction engines, another week to farm accounts, another to stock feeding, and still another week to electric wiring. Perhaps a week other week be devoted to veterinary medicine. Sometimes a man is hired for the short course, but last year an instructor was sent from the Iowa State College for each week of the course.

Another good open-country consolidated school in Iowa is the Okoboji consolidated school near

Milford. This school has about 160 pupils, with a third of them in the high school. The cost of this school was \$25,000 and the cost of maintenance per year is about \$12,500. A unique feature in connection with this school was the moving in of two of the old school houses to serve—after being remodeled—as homes for the teachers and janitor.

In Iowa a consolidated school district must have sixteen sections. One-third of the voters in the proposed district may file a petition with the county superintendent asking for the consolidation. Objections may also be filed with the same officer. Those finding fault with the county superintendent may make an appeal to the county board of education. The law then provides that an election shall be called after the preliminaries have been decided upon. Village and country people vote separately and if a majority vote is not secured in both village and country, the consolidation cannot take place. Of course, this applies only where it is proposed to consolidate with a village.

Iowa's record with the consolidated school shows what can be accomplished when the people really decide that they want better schools. These new consolidated schools in the villages and open country of Iowa today resemble the big city high schools that a few years ago were pointed out as being the model schools of the nation. In fact, it would not seem strange that in the future some of the consolidated schools will eclipse some of the consolidated schools as far as the school plants are concerned. Today one finds many of the school buildings far in advance of those in any neighboring city.

"Subsidizing the Rural School," another article by Mr. Crawford, will appear in an early issue. This article will deal especially with the consolidated schools in Minnesota and the way in which state funds are made available for these schools.

FARM LABOR—A SOCIAL SURVEY

(Continued from Last Week.)

Many farmers seemed to feel it necessary to scatter tenant houses in the far corners of their farm in order to prevent disturbances among the various families. This point was investigated thoroughly and found to be without foundation. It is against the natural instinct of people to live in an isolated locality and away from other people. The ideal plan for tenant houses would seem to be to have them in fairly close proximity along a road. Front yards should be provided so that a lawn or ornamental shrubs could be set out. Sufficient room should be left between houses so that each family could have a garden and enough backyard to have their own poultry. With houses arranged in close proximity, the cost of installing running water, lighting, and sewer systems would be greatly reduced if this was contemplated. A certain pride in the appearance of a house would be stimulated between the various families by such an arrangement. It is rather doubtful whether the two-family house is suitable as it does not provide for enough privacy. There seems to be no good reason why with but small additional cost the bungalow type of tenant houses could not be used instead of the two-story type. This would be more attractive in appearance and more convenient. A heating system which would heat the bedrooms in winter should be given serious consideration. If running water is installed and bathing facilities considered, the recommendation would be that a shower bath be used in preference to tubs. The shower bath is coming into

Note 2—This paragraph sets up a worthy standard toward which we may work. Many farmers will have to provide for themselves the conveniences mentioned before they are in a position to provide them for the tenants. Shower baths may be all that is claimed for them where laborers are concerned, but most would prefer tubs for family use.

(Continued on Page 24).

Soils and Fertilizers

Conducted by Dr. J. G. Lipman

Our readers are invited to send us their problems on soils and fertilizers and they will be answered by Dr. Lipman in this column.

DOES IT PAY TO KEEP MANURE UNDER COVER?

Much has been said in our agricultural books and farm papers about the importance of protecting manure against rain. We are told that manure which is not sheltered is apt to lose a large part of its soluble potash and nitrogen, which are carried away in the liquid that runs off from the manure heap; on the contrary, where manure is kept under cover, these losses are prevented. It is just as true that even where manure is kept under cover the loss of ammonia cannot be entirely prevented. The question, therefore, arises whether the saving which is accomplished by keeping manure in covered barnyards or in covered manure pits would compensate the farmer for the cost of sheltering the manure. The answer to this question may be found in some of the results recently obtained at the Experiment Station at Rothamsted, England, and also on Lord Elvedon's farm at Woking, England.

The land at Rothamsted is a heavy clay, while that at Woking is sandy. The experiments in question involved the keeping of equal amounts of manure under cover on the one hand and in the open on the other. After a certain length of time, these different lots of manure were applied to equal areas of land and potatoes and wheat grown at Rothamsted and wheat alone at Woking. It is reported that, from the equal quantities of manure kept under cover and in the open, potatoes showed an increase of 7 hundredweights per acre and wheat 5 bushels per acre at Rothamsted from the sheltered manure. At Woking the manure that had been kept under cover produced 2 bushels per acre more of grain than did the wheat which had received an application of manure that had been kept in the open. Similar experiments have also been carried out in Ireland. In this case two heaps were made up of about the same weight. One was kept under a shed and the other was exposed to the weather. When the time came to apply this manure, equal quantities of the two lots were weighed off and spread on equal areas of land at the rate of 15 tons per acre in each case. Potatoes were planted on the land so treated and in due time the crop was harvested and weighed. The results showed that the manure that had been kept under cover produced 9 tons and 14½ hundredweights per acre, while the manure that had been exposed to the weather produced 7 tons and 14½ hundredweights per acre. In other words, there was a difference in favor of the manure that had been kept under cover of two tons per acre, which is equivalent to about 67 bushels. It is pointed out in connection with these experiments that the real superiority of the covered manure is even greater than indicated by the differences in yield, since the manure which had been kept under cover lost less weight than the manure which had been kept in the open. In other words, the sheltered manure was more ton for ton than the exposed manure and the latter, in addition, had shrunk in weight much more than had the sheltered manure. In spite of much that has been said and written on the subject, many farmers in this country still fail to exercise sufficient care in protecting their manure heaps against leaching. The losses of plant-food, particularly potash and nitrogen are, in the aggregate, very large.

Some folks never borrow trouble—they just borrow \$2 and fergit it.—Kin Hubbard.

TILLING DAMP SOIL

I have about 10 acres of low wet land which is of very stiff texture, some a black soil, and part what is known here as white oak. It was, previous to plowing last fall, in timothy, but most part sage grass and weeds. It has not been tilled for about five years. The land is very poor where the white oak is. We have ditched and drained it as best we can but it is quite wet. How can I treat this to get it in timothy and clover for hay crop? Would you advise lime and how much per acre? It was plowed in October and I will have to disc it well before planting to corn. Would you apply fertilizer and what formula. Some say it will not grow anything but grass. If possible, I would like to get this land in a condition so I can till it the same as my other soil. Would coal ashes help to loosen it? Do you think I can get a fair crop of corn this year? D. M. M., Kent Co. Del.

Mr. D. M. M., Dover, Del.—From your description, it would seem that it would be very difficult to grow consistently good crops of corn on a large part of your field. If the land is plowed in the preceding fall and a good fourth established by the middle of May, a good corn crop could possibly be grown if the rainfall during the summer is below the average.

If the installation of a system of tile drains is not practicable, it might be possible to put in more open ditches and establish a good fall. After this is done, it would be well to apply a generous quantity of lime, preferably burned and slaked lime, which would be more efficient than ground limestone on land of this type. It would be worth while to use an equivalent of about one and one-half tons of freshly burned lime per acre. This may be air-slaked or water-slaked before application as may seem most convenient. There would be no objection to using some coal ashes with the lime, since the coal ashes would tend to open up the land and improve the texture. There is,

of soda in the following spring at the rate of 100 pounds per acre.

If it is your plan to try a crop of corn next spring, the land should be prepared as suggested for the soybeans except that a complete fertilizer should be used. A 4-8-3 or a 4-10-3 fertilizer, used at the rate of 400 to 500 pounds per acre, would answer your purpose.

MANAGEMENT OF SANDY SOIL

I am moving onto a farm near Grenloch, Camden Co., New Jersey, and as I have had no experience with sandy soil such as is found in that section I would be glad if you could give me some help. My main crops will be corn, oats, timothy, clover and alfalfa. The farm has been producing only fair crops and I would like to bring it up by the use of commercial fertilizers and lime if they are needed. Will you please advise me as to their use? I will not be keeping cattle to any great extent.—F. H., Bucks Co. Pa.

F. H., Bucks Co., Pa.—The ability to maintain your land in a fertile condition will depend not alone on the proper use of commercial fertilizers, but also on the proper adjustment of your crop rotations. One of the common rotations in general farming areas is corn, oats, wheat, timothy and clover. However, this rotation would not be entirely suitable for the land located in the vicinity of Grenloch. A more logical rotation would be corn, potatoes and alfalfa for two or three years; or it might be corn, potatoes, timothy and clover. An early variety of potatoes, like Irish Cobbler, is a popular type in that territory. Hence, the crop is removed early enough to allow the seeding down of the clover and timothy mixtures in the late summer. It is also possible to grow in that section the late varieties of potatoes, like Redskins or Superbs. These are usually planted between July 15th and August 1st. It would be feasible in some years to precede the late potato crop with early peas. The late potatoes are harvested usually in November. In occasional years it would pay to grow tomatoes on part of the area after the corn. At present, however, tomatoes are not a paying crop.

In order to assure the proper maintenance of organic matter in the soil, it would be desirable to depend on crimson clover or vetch, or, preferably, a mixture of crimson clover, alfalfa and vetch to be sown as a cover crop in the corn. This could then be plowed under in the following spring for the potatoes. With a cover crop after the corn and with the land kept in grass for two or three years, it should be possible to maintain the humus content

and to depend on commercial fertilizers alone for maintaining the land in a productive condition. A 3-8-5 fertilizer could be used for the corn at the rate of 400 to 500 pounds per acre. For potatoes a larger proportion of nitrogen in the fertilizer would be necessary—possibly, as much as five per cent ammonia. A 5-10-5 fertilizer could be used to advantage for the potato crop at the rate of 1400 to 1800 pounds per acre. It would be desirable to use lime in order to assure a good growth of legumes. However, lime will have to be used carefully if potatoes are included in the rotation, since the use of lime encourages the growth of the potato scab fungus, and therefore, reduces the value of the potato crop. If potatoes are not made one of the principal crops, lime should be used generously. Applications of two to two and a half tons of ground limestone per acre every five or six years should give profitable returns. It should help to grow an abundance of forage, particularly of legumes including, aside from the legumes mentioned, soybeans, alsike clover and possibly also sweet clover.

A manure spreader saves time, labor and manure values, especially if the manure is spread as it is produced.



Drove of Hampshire Hogs on an Iowa Farm



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OUR JOB is to serve our readers. Whenever you are
puzzled, write to us and we will help you if we can.
—The Editors

No man is born into the world whose work is not
born with him; there is always work and tools to
work with, for those who will, and blessed are
the horny hands of toil—Lowell.

Daylight Saving

WHEN WE BEGAN the fight against the passage of a daylight-saving law we took it for granted that all town and city people were for it and that only farmers were against it. We have learned, however, that a great many workmen do not favor it and are as pronounced in their opposition as are farmers. The opposition to the passage of the bill is progressing very satisfactorily and the chances for defeating it look bright at this time. It is too early, however, to cease working against it. Every farmer organization and every individual farmer who has not already lent his name in opposition should write to his representative and senator at Harrisburg at once. If you do not know the name of your representative, send your protest to Hon. Charles G. Jordan, House of Representatives, Harrisburg, Pa. We have placed in his hands the protests of over 10,000 Pennsylvania farmers who filled up and returned the blank published in our January 29 issue.

The senate of New Jersey has already passed a daylight-saving bill by a large majority but at the time this is written the house has not acted upon it. We have received and presented the protests of New Jersey farmers and hope that enough pressure will be brought to bear to defeat its enactment in that state.

A Commendable Milk Bill

A BILL to regulate the sale of condensed or evaporated milk by establishing a minimum content of milk solids and milk fat was introduced into the Pennsylvania Legislature by Mr. Cook. The bill was prepared under the direction of the Pennsylvania State Dairy Council and is known as House Bill No. 497.

It is for the protection of the public health and the dairy interests of the state that the prohibition of the manufacture and sale of compounds of skimmed milk and vegetable oils, to be used in the place of cream, condensed or evaporated milk, or in the manufacture of ice cream and other dairy products.

Actively supporting this bill, in addition to the Pennsylvania Dairy Council, are the Interstate Milk Producers' Association, the Dairywomen's Co-operative Sales Company, the Dairywomen's League, Pennsylvania State Grange, Pennsylvania Ice Cream Makers' Association, Philadelphia Milk Exchange, the Pittsburgh Milk Dealers' Association

and the Philadelphia Inter-State Dairy Council.

The Legislative Committee of the State Federation of Labor is in favor of the bill; various officials in the State Department of Agriculture, the State Department of Education and the State Department of Health have had placed before them the facts relating to this question and are unqualified in approving the proposed legislation.

Urge your legislators to support the measure on the floor.

Pennsylvania Farmer

tion and the Philadelphia Inter-State Dairy Council.

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Fertilizer Prices

NO OTHER question concerning farm production problems has caused as much discussion the past few weeks as has that of fertilizer prices. The prices named in December at the time farmers were suffering most from price declines seemed altogether out of proportion to the prices of farm products and the fertilizer trade stood still. Since that time there has been a decided drop in practically all lines of fertilizers and the reports are now that nearly normal sales are being made.

This is a most encouraging as well as a fortunate trend because it indicates normal planting and insures an adequate supply of plant food for the crops.

A few of our writers have named prices of fertilizers and fertilizing materials in their correspondence and this has brought a flood of letters asking where goods can be procured at the prices named. We are not in a position to recommend any particular firm or goods in any line, but we believe that all the manufacturers will make practically similar prices under similar conditions. It must be remembered that the low prices named are for carload lots at loading point and for spot cash. Buyers cannot expect to get these low prices for small quantities or when they buy on credit.

Information Wanted

WE HAVE inquiries for information on setting and sharpening all kinds of saws; also, for organizing a farmers' fire fighting force—a plan by which neighboring farmers may be equipped and called together for fighting fires. We would be glad to print an article on the first subject if written by an experienced saw dresser, and on the latter subject if written by one who has had experience in such an organization.

Our Washington Letter

Enough of the 1920 census returns have been made public to indicate that this census is a vast improvement over those of preceding decades, especially in the collection of valuable agricultural and live stock information. It is believed that the returns from the census on purebred live stock will be useful in developing a larger interest in the improvement of farm animals by the use of better breeding stock.

The census returns on purebred stock have been an agreeable surprise to officials of the Department of Agriculture, who are especially concerned in live stock improvement. They evidently did not realize the extent of the purebred stock industry and the rapidity of its development in recent years.

The figures compiled in Ohio, Michigan and New Hampshire show a total of 19,135 Holstein bulls, and 7,896 Jersey bulls. Shorthorns lead the beef breeds with 23,663 bulls. Herefords come next with 10,864 bulls.

Of the sheep breeds, Shropshires lead in nearly all the states reporting. In Ohio, as would naturally be expected, the Merinos are most numerous. On 1,291 Ohio farms there are 24,170 purebred Merino sheep, more than all the other breeds combined and more than all the purebred sheep in Michigan.

The Poland Chinas and Duroc Jerseys are close competitors and are the predominating breeds of hogs in ten states. Durocs are first in Michigan, while Poland Chinas lead in Ohio and Indiana. In Indiana the census indicates that the Spotted Poland Chinas are making rapid progress in gaining popular favor.

It is interesting to note that horses stand at the foot of the column in percentage of farms on which purebreds are kept. While in all the ten states more than ten per cent of the farms report some kind of purebred animals, only two states, Ohio and Indiana report above one per cent of the farms having purebred horses. The Percherons stand highest in numbers with Belgians second in Michigan, Ohio and Indiana.

March 5, 1921.

Figures showing the standing of the purebred live stock industry in the remaining thirty-eight states, it is said, will not be available until next fall, the work being held up a lack of appropriations to carry it on expeditiously. It is expected, however, that when all the statistics on purebred stock are available, they will be highly useful to breeders' associations and all others who are interested in the improvement of our live stock.

During the closing days of the Sixty-sixth Congress the farm organizations' Washington representatives made persistent efforts to secure action on the packer bill and other important measures that have been long pending in Congress.

As a final effort to get the House to vote on the packer bill, they went before Majority Leader Mondell, arguing that with only two or three other bills of importance remaining on the calendar the packer bill should have a preferred position. Representative Mondell declined to make the move to bring the measure before the House. Representative Campbell of Kansas, chairman of the Rules Committee, was appealed to with the hope that a special rule might be made which would allow the House to vote on the bill. This he was unwilling or unable to do.

By these efforts the farm organization leaders have succeeded in placing the responsibility for the present status of packer legislation squarely upon the Steering and Rules Committees of the House.

The American Farm Bureau Federation and National Grange representatives are receiving many protests from the Northwestern dairy interests and the California poultry raisers against the provision in the cold storage act which requires perishable commodities to be marked "cold storage" if on the road more than ten days. The Petaluma, California, poultrymen sent telegrams saying that their industry would be ruined unless the time was extended to thirty days. It is probable that shippers of poultry products and butter from some of the Middle West and Rocky Mountain states will be similarly effected by this measure. It is predicted that a change in the time allowed in transportation to thirty days will be made early in the next session of Congress. It is impossible to get a bill thru Congress satisfactory to all the producers.

Since the death of David Lubin this government has been unable to secure the services of a competent representative at the International Institute of Agriculture in Rome, because of the insufficient appropriation for salary and expenses. —Elmer E. Reynolds.

Whether they knew they would be making deficits or not has been much discussed, but the disposition is to appropriate what is needed this time around and not put the next session in a hole. Then, too, the state has had to meet some unusual charges for office accommodations because the present Capitol is too small to hold the departments and bureaus and highly indorsed the movement. Hon. Josiah C. Wolcott, senior senator of Delaware, gladly accepted membership in the organization. He spoke highly of the work done by the American Farm Bureau to the U. S. Senate which led to postponement of the Nolan Land Tax bill which proposed to tax real estate 1 per cent value above an appraisal of \$10,000.

Cost of the Insane.—One of the charges which have made legislators pause in addition to the discovery that the teachers retirement system will take a couple of millions and the next teachers salary bill a couple of millions more is that the state is going to require something like \$8,000,000 or \$7,000,000 for their maintenance and care. There is a bill in hand to increase the allowance for these unfortunate and with the growth of population this situation is bound to become a still greater problem. The insane may yet be the cause of a radical change in state policy.—Hamilton.

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NEW JERSEY NEWS

Fight Daylight Saving.—Vigorous opposition is to be recorded against the passage of the Eldridge daylight saving bill, providing for the changing of the clock one hour from the last Sunday in April to the last Sunday in September, before it is acted upon in the Senate. It is by no means a popular piece of legislation here among persons directly and indirectly interested in the work of the agriculturists of New Jersey and in sympathy with their efforts to prevent the injection of anything that will cause a decrease in the production of foodstuffs. A fight worthy of much admiration was put up in the House of Assembly by members of that branch of the Legislature from the rural sections of the state where great farming interests are located, but the bill was passed by a big vote that came from the assemblymen from the populous centers where the new plan is wanted. Assemblyman Emory Roberts, of Burlington county, where he is an extensive fruit grower and actively identified with agriculturists in the promotion of movements of a most worthy character, was one of the principal spokesmen against the measure. He emphatically declared it would vitally interfere with the efforts of the farmers to get on their feet after striving to overcome wartime problems.—Kelly, Trenton.

Henry C. Wallace, Secretary of Agriculture

At the time this paper goes to press there seems to be no doubt that Henry C. Wallace of Iowa, will be named to fill the office of Secretary of Agriculture in President Harding's Cabinet. Mr. Wallace is editor and publisher of Wallace's Farmer and has been prominently identified with agricultural interests. He is a farmer and livestock breeder, member of United States Livestock Industry Committee, Secretary of Corn Belt Meat Producers' Association, and has been long interested in the Young Men's Christian Association.

Photo by Underwood & Underwood

March 5, 1921.

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HARRISBURG LETTER

Down to Brass Tacks.—The Legislature of Pennsylvania has started out to find out what money it must appropriate to meet obligations which have grown up with the years. From present indications it is going to cut its coat according to the cloth instead of leaving the trimming work to be done by the Governor. This is the most important matter that has arisen out of the recess with its various reports of alliances and skirmishes and pilgrimages. It seems to be due to a realization that the state will have to get along with very little more than the revenue appropriated in 1919 and that there is a possibility of it going lower; that there will be some hard fighting before any new revenue bills are passed and it may be a couple of years before the state gets the benefit any way owing to legal tests which are sure to be made; that the state administration is not inclined to reduce the list of employees or the state payroll to any extent and that the payroll will have to meet some pretty steep deficits. Then, too, there is a very general idea among members of the Legislature that there is going to be some accounting to be done after this session and they want to get it over as soon as possible. Word has gone out to the heads of departments of the state government to send in their budgets to the committee in charge of the general bill and to the men in charge of teachers retirement and teachers salary matters to figure out what is needed so that there will be no deficiencies to meet next session. One of the greatest troubles has been that the people in charge of the appropriations in 1919 did not provide the money needed to meet all requirements. Whether they knew they would be making deficits or not has been much discussed, but the disposition is to appropriate what is needed this time around and not put the next session in a hole. Then, too, the state has had to meet some unusual charges for office accommodations because the present Capitol is too small to hold the departments and bureaus and highly indorsed the movement. Hon. Josiah C. Wolcott, senior senator of Delaware, gladly accepted membership in the organization. He spoke highly of the work done by the American Farm Bureau to the U. S. Senate which led to postponement of the Nolan Land Tax bill which proposed to tax real estate 1 per cent value above an appraisal of \$10,000.

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Pennsylvania Farmer



Chicks fed on Ubiko Buttermilk Growing Mash, grow faster, and keep healthy and strong.

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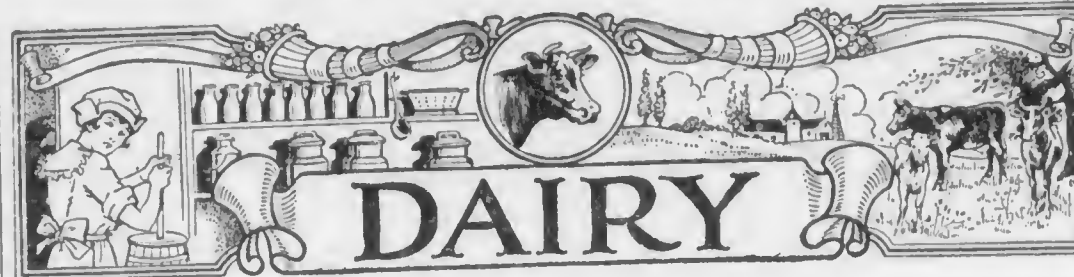


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Dairy Rations at Present Prices

By Prof. A. L. BEAM

DURING the last few years great progress has been made in the development of balanced rations and the necessary requirements for milk production and body maintenance of dairy cows. Stress has been laid upon the necessity of combining in proper amounts protein, carbohydrates and fat in the cows ration. More recently it has been found that the ration should also contain vitamins and mineral matter. Both of these are abundantly available in the certain roughages and grain feeds. Yet when we compare the mineral matter or

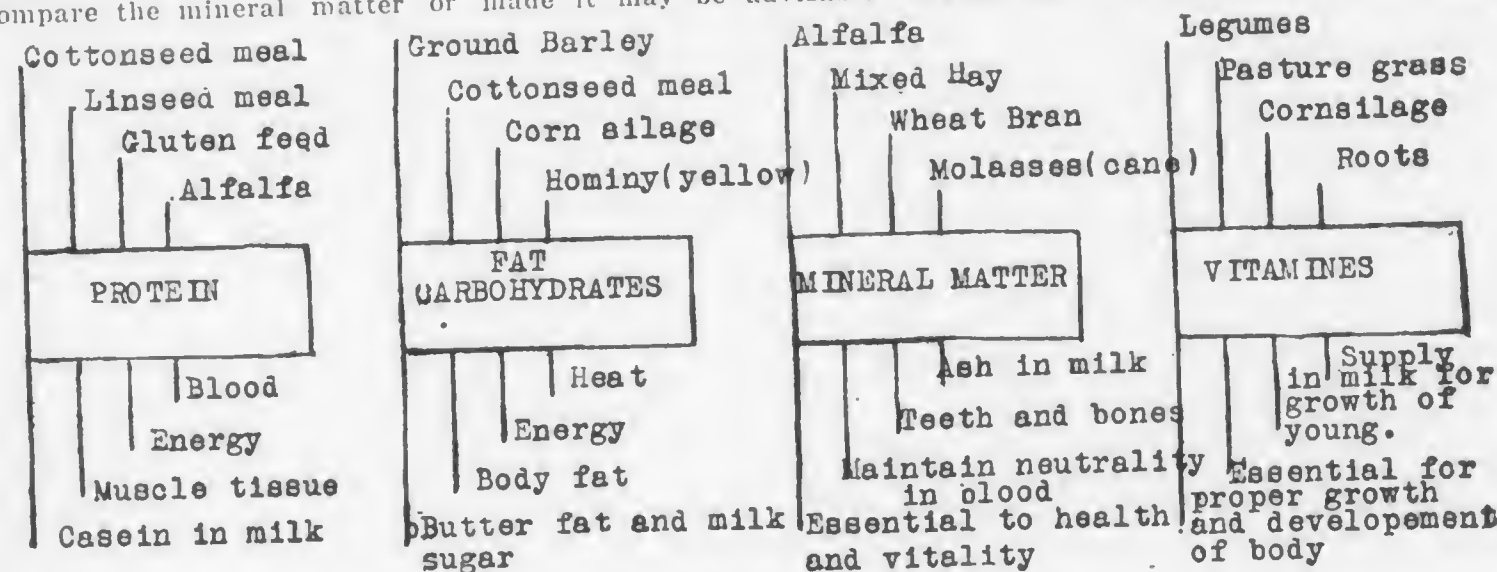
ed indicate that with the best of selection some heavy producers must have their ration supplemented with mineral matter in order to maintain their production.

With the present trend of downward prices on feeds a possible saving may be made in dairy rations by substituting feeds which are now lower than they were when the ration was first made up. In most cases, where a feed is too high priced for the nutrients it contains and no substitution can be economically made it may be advisable to elim-

all the sources or all of the various uses or functions in the process of converting food into milk or body requirements. However, some of the economical sources, together with the more important of the final uses are given.

Since a choice of the source of the various nutrients is possible it can be based largely on market prices; not market prices on tons of feed alone but the cost of the digestible true protein and net energy content. The table below gives the digestible protein and net energy content of the more common feeds, the price per ton, the price per 100 pounds, the cost of 100 pounds of digestible true protein and the cost of 100 therms of net energy.

From this table it is possible to select those feeds which most economically furnish digestible protein and net energy. Comparing these results with the table which might be made with prices six months ago shows that our choice of feeds now may be entirely different from what



like as it is more commonly called, which a cow receives in her ration, with the amount secreted in the milk produced and that which is needed for the proper growth and maintenance of her body and as well as that of the foetus we find that in many cases the animal receives an inadequate supply. Deficiency is especially evident with regard to those cows which are giving large amounts of milk. To remedy this without making use of commercial preparations, care should be used in the choice of feeds and even then experiments which are at present being conducted

inate it from the ration even though this lessens the variety of the grain mixture which is essential to a well balanced ration. This, of course depends upon the price at which dairy products sell on the market as compared with the cost of feeding stuffs. The accompanying diagram gives in the center of the squares the essential requirements for the production of milk and the proper growth and development of the dairy cow. Above each figure are sources of these requirements while below is listed the uses to which they are put. No attempt has been made to list either

it would have been at the beginning of winter. For example the present low price of cottonseed meal makes it one of the cheapest sources of both protein and net energy. Again it shows that wheat bran, altho containing fewer nutrients than standard middlings is priced higher on the market. The same difference is noted in the price of oats and barley. In this table altho these prices may not hold true in all localities it also shows the high cost of roughages as compared with the present market price of grain.

The attempt has been made to show that certain conditions or factors which determined the dairy ration a short time ago have changed now so that the feeder who studies the present situation of feed prices has greater chances of making out on the present price of milk than the feeder who pays little attention to market conditions of feeding stuffs.

ANNUAL REPORT OF COW TESTING ASSOCIATION

Kenneth S. Bailey, tester for the Clinton Cow Testing Association, Clinton Co., Pa., has written the following letter in reference to the work of the organization he represents:

Due to the fact that many people are not familiar with the principles of this work, the following will give an explanation of the same.

An association is simply an organization of farmers who unite for the purpose of employing a trained man to weigh and test milk of each cow in the herds of the association at monthly intervals; also record the amounts of feed and roughage she is consuming. Thus a record of every cow in the herd is obtained at the end of the year without any trouble on the part of the individual dairy-

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thus compared it with that of the supervisor near the close.

A purebred sire is one of the best paying investments on the farm. With such a sire at the head of the herd, the owner is most generally cited as one of the most progressive farmers. The dairy men of this association readily could see the good points in such and ousted the scrub bull by replacing with twelve purebreds, thus with five which were in use we had at the close seventeen owned, and five other members made use of their neighbors.

Five silos were erected and four of the members installed drinking cups which was a paying proposition as stated by one of the men. "I would not have the cups removed twice what it cost to buy them and the expense of installing." Two milking machines were put in use and one electric light plant. Eighty-six cows culled and sold as unprofitable.

Another good feature experienced by the dairymen was the purchasing of feeds co-operatively, especially last fall when the market kept soaring to higher elevations. One herd of registered stock was bought and distributed among the members.

Last June the members and their friends numbering about forty people, accompanied by the tester visited several of the up-to-date dairy farms in Susquehanna County. This trip was not only very enjoyable, but very educational.

As for the final conclusion we wish to emphasize strongly that continued testing is necessary for progress. The dairyman who tests for one year only is not looking to the future. Cow testing work gives a valuable breeding guide for the dairyman who wishes to build up his herd.

Unfortunately the dairyman who needs cow testing the most uses it the least. However, the records of the high producing herds show that the greater the production the more careful the culling of the "boarder cow."

At the present high prices for feed and labor a dairy herd must produce more than 6000 pounds of milk and 200 pounds of butterfat per cow annually to bring the owner a profit.

Greatness of production as provided by weighing and testing the milk is not the complete record of the greatness of the cow, for the question still remains as to the cost of production. And, after all, this is the vital question and the one that is growing in importance continually. It is rule that a cow which yields largely of milk and butterfat is the economical producer, but it often occurs that of two cows producing the same amounts of milk and butterfat in a given time, one of them does so at a less cost of feed. At the present time the difference in profits of the herds in this association is not so largely governed by the cost of feed as in the yield but as conditions change, land becomes higher in price, feeds and labor scarcer and more expensive this difference will widen.

Thus as a final close we wish to say twenty of the twenty-six members joined for the second year's work also more new members and hired the same supervisor.

Note—Owing to lack of space we have been unable to publish many of the interesting cow-testing reports submitted, but the above report has so many suggestive features about it that we gladly give it space.—Editor.

The owner of a scrub bull should have a leather medal—made from the bull's hide.

DAIRY SCHOOL FOR PASSAIC CO.

Arrangements have been completed by Harold E. Wettyn, county agricultural agent for Passaic County of New Jersey, for a six session school for the benefit of the milk producers, distributors, and persons interested in the handling and care of milk and dairy products, whereby the aid of a course of lectures, the salient and beneficial points may be brought out and thoroughly discussed.

This idea is the outcome of a successful school on bee culture and poultry husbandry, whereby the same method, the subjects were thoroughly and most interestingly covered, for the benefit of all who were able to get admission.

The school is under the supervision of the County Board of Agriculture, and the methods and ideas conveyed are the latest the national and individual boards have discovered by experimenting and investigation.

The bee school, as it has been aptly termed, was held in three sessions and was attended by a great number.



R. D. CANAN

Field Man for Jersey Breeders in Ohio, Indiana and Illinois

ber, while the poultry school had an attendance of nearly two thousand for an eight session period, which covered a term of two weeks.

The dairy school is to go for eight sessions and the length of time required will be two weeks and is to cover such subjects as "Building and Equipment," depicting the modern methods of sanitary construction and the proper equipment to maintain such products, "Feeding and Herd Management," depicting the proper methods of feeding for the maximum of production and managing of herds for the proper and healthy production of milk—"Care of Milk from Cow to Consumer," showing the proper methods for caring for the milk from the cow to the consumer's table and the most approved methods for caring for the carriers and containers.

At this point a change is made, and a lecture in the care of and the elimination of sickness prevalent to stock is brought up. A thorough discussion in "Tuberculosis Eradication" is given, in which all forms, causes and remedies are set forth. There is particular emphasis laid on this subject, as it means so much to the public and the dairy man.

The "Family Cow" is given due consideration and the subject is ably covered by a most thorough lecture. "Marketing Milk" is discussed and a very thorough treatise is given, whereby all the modern methods are set forth in the proper and sanitary way of handling and marketing milk, from the time it leaves the cow until it reaches its destination for consumption.

"A Trip to a Modern Milk Plant" is the last subject covered, and the ideas conveyed are modern to the last minute, telling how to handle and care for the dairy, barns, stock and equipment.

The foregoing is tentative and should the attendance come up to the other schools, the program will be made to cover more subjects and in general, made a very thorough course, for the betterment of dairy-men.

STATE HOLSTEIN ASSOCIATIONS TO SPEND \$85,000

Approximately \$85,000 will be spent during 1921 by various State Holstein Associations in the interests of their members to develop and promote the dairy business in their respective territories.

The national body of the Holstein-Friesian Association of America has put the real punch into the State Associations during the past year. The idea was conceived about a year and a half ago, by R. C. Pollock, of the Extension Service of the National Association.

Most state organizations lack only the funds to go ahead and develop within their own boundaries better business methods in improving their herds and disposing of their surplus stock.

With this in mind, several state organizations were interviewed and eagerly accepted the help of the National Association to organize. Nine states and one group of states are organized as a result, and have a paid secretary on the job who spends all of his time in the interests of members of his state or district organization. The states organized and doing business are: Minnesota, Iowa, Illinois, Missouri, Wisconsin, Michigan, Ohio, New York, New Jersey and the New England States.

Some of the organizations have been promoted on the straight membership fee; others on a per cow basis. The plan has been successful, however, no matter what basis or organization was adopted and means that during the coming year something in excess of \$85,000 will be spent in these ten states for the improvement of dairying, raising the standard of sales and offerings, adjustment of all controversies, selection of higher producing stock and cooperation in cleaning up of diseased herds and areas.

BRADFORD CO. COW TESTING ASSOCIATION

As June approaches, the increase in high producing cows in Bradford Co. Cow Testing Associations continue to show a greater number and for the month of January the reports give a nice increase over the previous month's records.

The Canton Association again leads with the greatest number of high producing cows while the Wyalusing Association has the highest individual. The Canton Association has one hundred and one cows that produced 40 pounds or more of butterfat. The Wyalusing is second with sixty-three, the Troy third with fifty-six, Laurel Hill and Rome are a tie for fourth place with thirty-three each and Towaunda-Wilmot fifth with twenty-eight.

Again the four highest producers are all purebreds. Three are registered Holsteins and one a registered Jersey. The highest cow is a registered Holstein owned by C. W. Newman of the Wyalusing Association. The second high cow is a Holstein.



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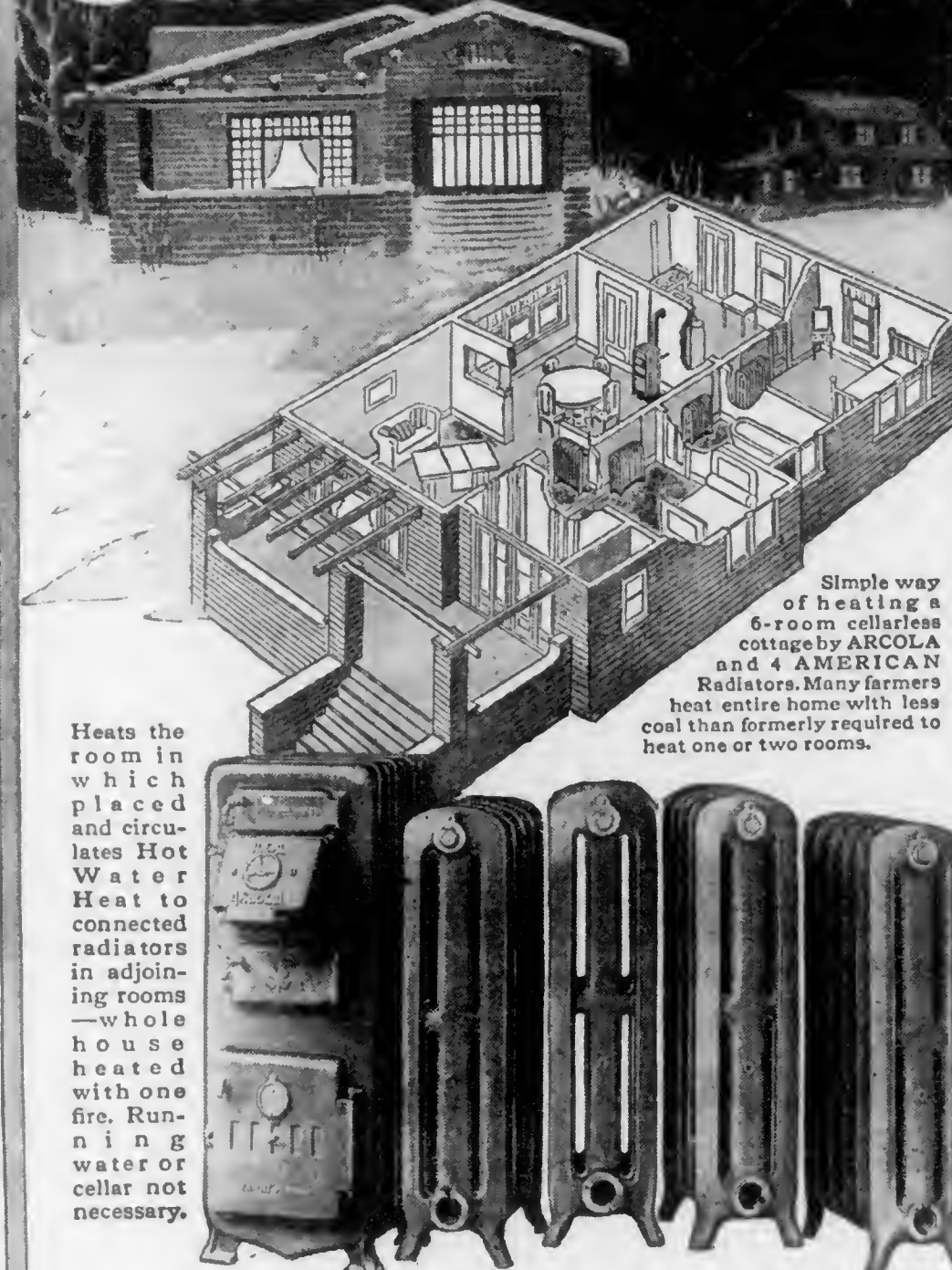
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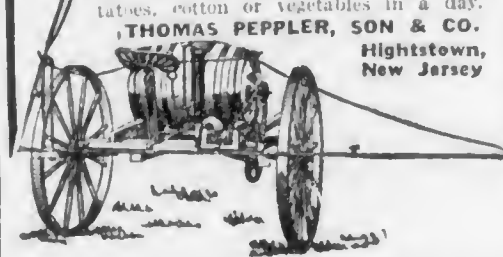
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HORTICULTURE

Making Up a Seed Order

By R. W. De BAUN

MAKING up the seed order is no easy task. In fact it necessitates careful planning before we can decide upon the kind of vegetables we will plant; the varieties we believe will do best and the quantity of seed we will need of each crop to be planted.

In writing the names of our pet varieties, I realize that some experienced growers may be amused at some of the selections. However, I will state any reasons in most cases and not fear criticism.

For wax beans we use the Davis White Wax (3 pecks per acre). It bears a big crop of very beautiful waxy beans which attract the buyers. Furthermore, it at any time the market is down, the crop can be allowed to mature. The seeds are snow white and are excellent for home use.

The old standby in green beans is the Black Valentine. It is extremely hardy, a quick grower and can be planted very early. It yields heavily the first picking and it can be harvested very fast. Last summer two Italian women picked 42 bushels in one day and were done before six o'clock.

The Early Wonder beet has been our standby for years because it grows quickly; it is deep red, tender and delicious. The beets are perfectly round and the tops are attractively red and small so that they are easy to bunch and tie.

We do not go in for the extra early cabbage because it would conflict with early lettuce, strawberries and currants. Furthermore, during July and August we are heavy in early tomatoes, sweet corn and cantaloupes. During the month of September there is an opportunity to load cabbage conveniently before the fall crops of spinach, cauliflower and lettuce come on. For harvesting in September we use Market Gardeners No. 2 as it is a strong grower and produces large compact heads. Copenhagen market is wonderful when it grows right but with us it seems to be subject to disease and is uneven.

The Chantenay carrot is much more attractive than the Danvers Half Long which we used until recently. Snowball cauliflower is the universal standard sort.

Easy-blanching celery is a most valuable variety of recent introduction. It grows vigorously and is resistant to disease. It has a multitude of medium length, crisp, heavy stalks of delicious flavor. In fact it is rapidly replacing Golden Self-Blanching, Giant Pascal, White Plume, etc.

When it comes to sweet corn, it is a conundrum. First first early we use Simon's Early Wonder. At the same time (about April 20) we plant a field of Howling Mob or else Early Champion. All these varieties produce a good sized, deep-grained, well-filled ear. Simon's Early Wonder sweet corn will be ready a few days before the others and only one planting is made of it because it is not quite large enough for summer trade. However, the Early Champion and the Howling Mob are good sized. We use them for successive plantings be-

cause they can be planted closely and produce several thousand ears per acre. Stowell's Evergreen, Mammoth, Long Island, Beauty, etc., grow too large. The extra price received does not make up for the reduced yield and heavy hauling. Country Gentleman is delicious when young but it gets tough and stringy quickly. Golden Bantam is delicious but too small to give satisfaction commercially.

Another new variety of merit is the Jersey Pride cucumber. It is a selection from White Spine, but superior in every way. Furthermore, the undersize cucumbers make more desirable pickles than any other variety of cucumbers.

Black Beauty eggplant is earlier and more vigorous than Long Island Improved. Furthermore, the fruits have a black glossy appearance which is more desirable than a dull purple.

Big Boston lettuce is a great favorite for spring and fall use as it is vigorous and a producer of large hard heads which carry well in shipment. However, we need another variety which grows quickly, can stand the heat of summer and yet produce a head similar to Big Boston. The best variety we have found for this purpose is Simon's Cabbage Head. A small planting is made extremely early. It will be ready one week quicker than Big Boston. Again along in July when it comes time to plant the first fall lettuce Simon's Cabbage Head is used because it can stand the heat. Salamander resists the heat too but the heads aren't large enough. May King is a quick grower for early spring but it is too small and tender for commercial use.

Dutch Butter has a beautiful color but with us the stem is excessively large and the head is elongated rather than "close to the ground." As to musk melons, or cantaloupes, we use the Knight or Maryland because it is of the desirable Rocky Ford type but larger so that it fills up quickly.

The Southport Yellow Globe onion is the only variety we grow. It yields well and is a good keeper. Red onions are out of date; white onions are shy yielders and poor keepers.

Hollow Crown parsnip is the only variety we have ever used. There are a multitude of desirable peas. For first early planting we use three varieties which mature in succession: Laxtonian, Gradus and Telephone. A second planting of the Telephone variety is made three weeks after the first big sowing. Then the last planting will come in one week after the first sowing of Telephone.

The Ruby King pepper is still our favorite, however, we have found by trial that the World Beater is a more meaty and more desirable pepper but it didn't yield heavily. Savoy spinach is the favorite because it is a free grower. The Bonny Best tomato is the finest early variety we have found. The Earliana is a few days earlier but the quality is miserable. We don't want it. For main crop in early fall we use Great Baltimore.

COUNTY NOTES

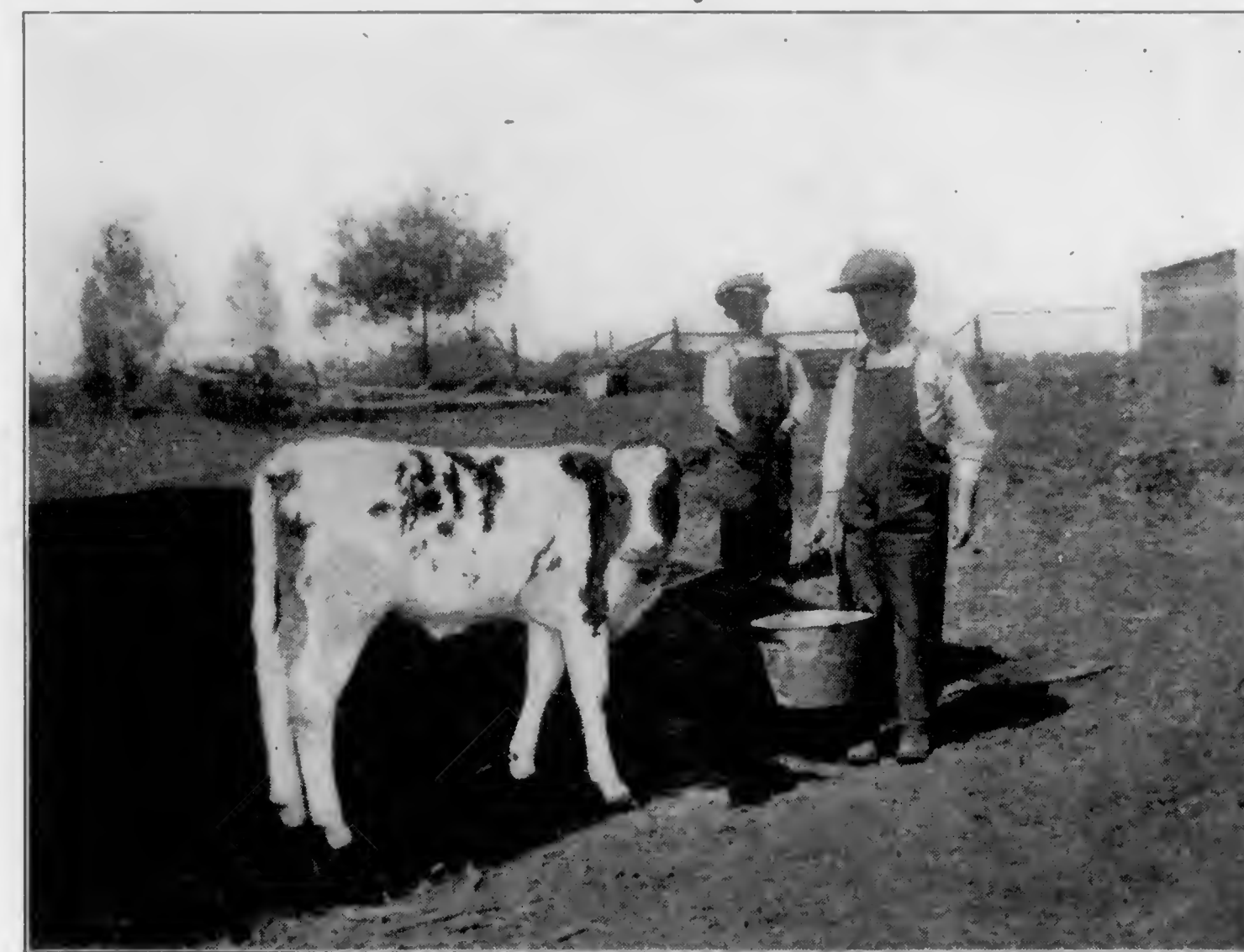
Otsego Co., N. Y.—Potato growers of this country have recently received a severe shock to their business. Market prices have declined to 35 cents a bushel. Seed last spring was \$3.00 a bushel and some growers paid 40 or 50 cents an hour for labor in planting and digging. Farmers who sold their crop in the fall were fortunate, though the price was only \$1.25, which was less than the cost of production. Those who sold their seed were more lucky than those who planted. This is a disastrous condition of affairs in consideration that commercial potato growing is a leading industry in certain parts of this county, where potatoes have been the main, and sometimes the only cash crop, and in a few instances, practically the only source of income. It is impossible to determine at this early date what reaction the present situation will bring to bear on the 1921 potato acreage.—C. F. Myer, Otsego Co., N. Y.

Indiana Co., Pa.—The winter has been very mild and we had only two or three days of sledding in January. Fall grain looks good. Growers still have a good many potatoes to sell. Prices were too low in the fall to encourage selling and they are not much better now. Retail prices: Shelled corn, \$1.12 bushel; oats, 75c to 80c; rye, \$1.75 and scarce; butter, 70c; eggs, 70c; fresh pork, 20 @ 25c; potatoes, \$2.00; apples, \$1.40 to \$1.60.—David W. Stahl.

Washington Co., Pa.—There has been very little snow this winter and the ground has not been frozen much of the time. This has been bad on wheat and young timothy. Much of it makes a poor showing as the seedling was very late. Work is slack and many mines have closed. Idleness and crime are on the increase. Farmers are busy hauling manure and feed and caring for stock. Some are cutting mine props which are selling for 12c to 16c for six-foot lengths. Practically all of the 1920 wool clip is in the growers' hands yet. Some of it was pooled. No buyers yet but talk of 33c. Should bring \$1 to net growers anything. Hay \$28 to \$30, corn 80c, oats 50c, butter 55c, eggs, 70c.—Bruce McNinch.

Carroll Co., Md.—The open winter has made it possible for grading to progress for the state road between Westminster and New Windsor. Some ice has been harvested about four inches in thickness. Wheat is looking bad. Hides are very cheap; only first-class hides can be sold. The sanitary reduction plant is reported to have a large stock of hides on hand as there is no market. The railroad shops at Union Bridge have laid off more men. The cigar factory at Manchester, which was closed by a revenue officer because the tobacco was stripped in private homes, has been reopened since the strippers have been bonded. The fruit growers' association held a meeting Feb. 1 for discussing co-operative buying of supplies and marketing. 350 pounds of wool were shipped to the woolen mills, which are under contract with the sheep men to make blankets and robes. Prices are lower, eggs dropping to 55c dozen and wheat to \$1.70 bushel, while corn has advanced to \$3.25 bbl.—Harry I. Rinehart.

The sun is coming back; good days outdoors offer chances for pruning and fence repairing; bad days can be used repairing farm machinery.



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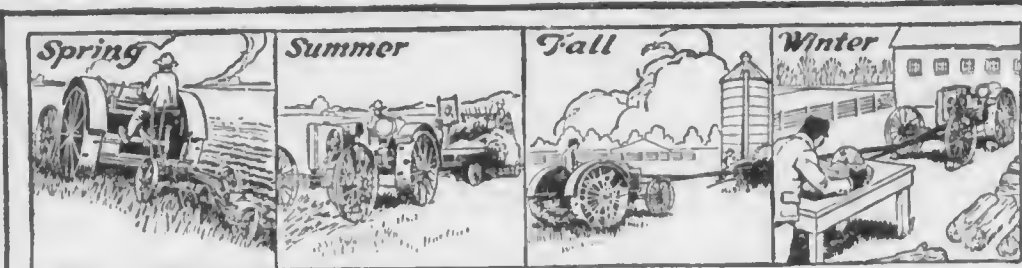
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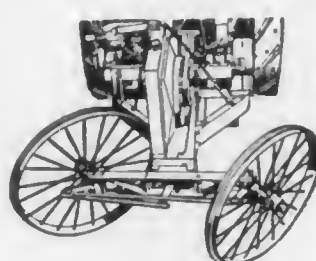
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"BRIGHT LIGHTS" FOR THE FARM

As a jazzy, tuneful melody, "How You Gonna Keep 'Em Down on the Farm?" has long since been discarded. But as an actual problem, it still holds the attention and consideration of many a mother and father of rural America. How is this trend of country boys and girls to the cities being checked? For it is being checked to a noticeable extent, even though the progress is slow.

"By making country life livelier and more attractive" might be a general answer to the problem. But that brings up the question: "How?" And this question is best answered by the findings of investigators of the research division of the Home Economics Society.

In a recently completed survey which covered various rural sections of several states, these investigators found that modern conveniences and labor-saving devices in and about the farm home are the most important factors in making young men and women more satisfied and contented with rural life. Many of the pleasures and conveniences that they used to go to the cities for, are being taken to the farm.

Automobiles, player pianos, talking machines, good magazines, water plants, washing machines, tractors, log saws—a score of other devices all are playing a part in adding pleasure and eliminating discontent on the farm and keeping boys and girls at home. Yet there is another factor, which, according to the survey, is exerting an even greater influence than any of the foregoing in "Keeping 'em down on the farm."

"Bright lights"—that's what is helping to keep them on the farm—instead of luring them away!

Bright, cheerful light for every task in the home, and for every pleasure—reading, playing games, dancing, and for just sitting around the family circle—works for a happier home and a more contented family. And the means of this happiness and contentment is easily within the reach of every rural resident.

While it is found that some of the larger farm homes have their own electric lighting plants, the improved gasoline lamp is fast becoming the favorite farm light according to the survey. The investigators find that while low first cost and low cost of operation has something to do with the favors shown gasoline lights, the real reason lies in the abundance of brilliant, mellow, pure white light that these lamps give. Burning common motor gasoline and lighting with matches, these improved gasoline lights give a steady, 300 candle power brilliance of a natural, daylight quality. Under these rays one may match the most delicate colors.

A gasoline lamp of the most modern and approved design can now be purchased for little more than an ordinary old-fashioned kerosene lamp costs. And the cost to use the gasoline lamp is little more than a penny a night. The fuel expense in one year's time more than pays for the lamp. All the while the whole family is enjoying a light that guards against eye-strain.

Years ago there was a feeling—perhaps justified—that gasoline lights were dangerous. The fact that the better gasoline lamps and lanterns of today are on the permitted list of the National Board of Fire Underwriters, removes all doubt as to their safety. If they were not safe they would not be permitted on this list.

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The Kiltone Co.
Vineland, N. J.

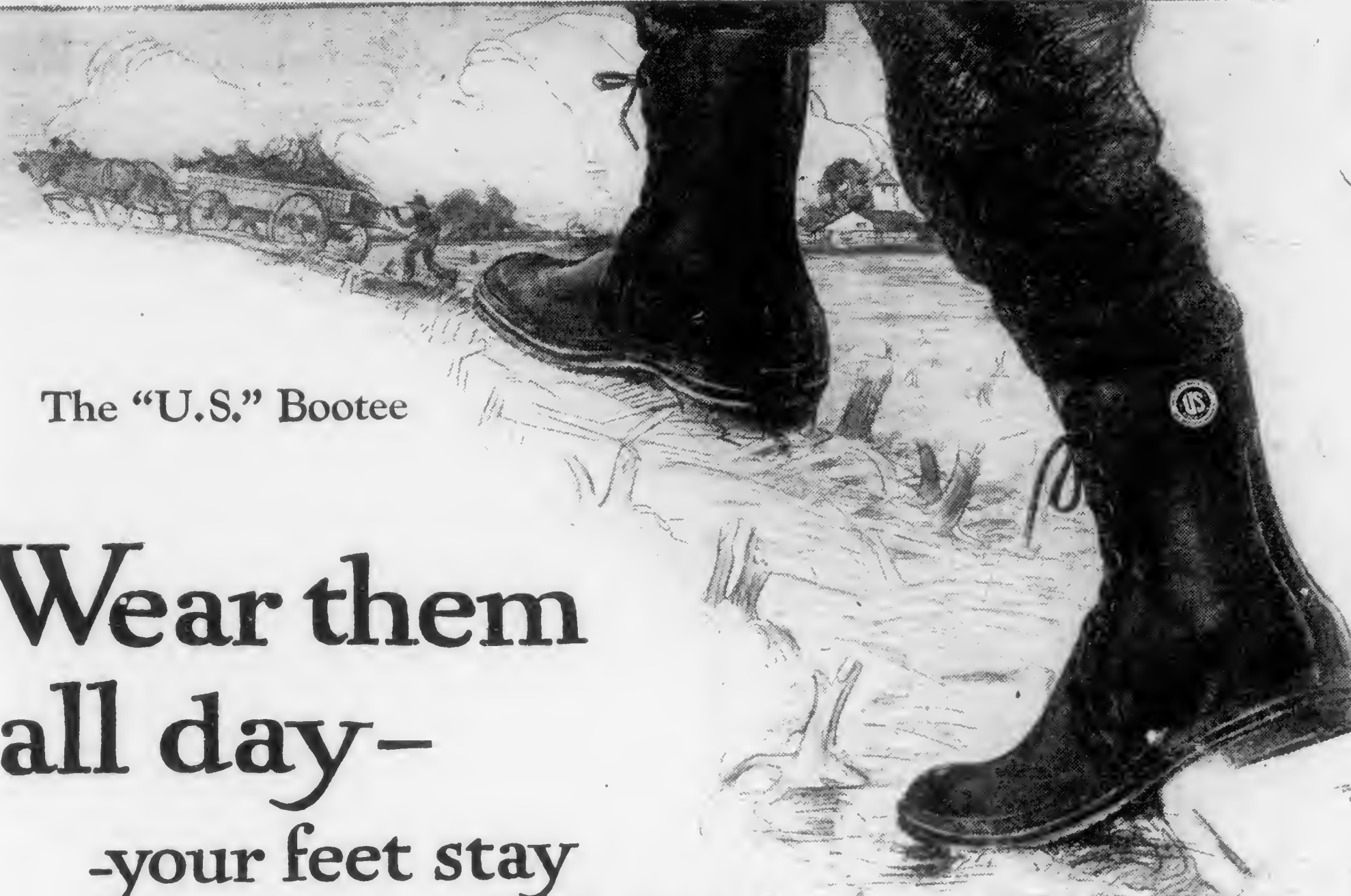
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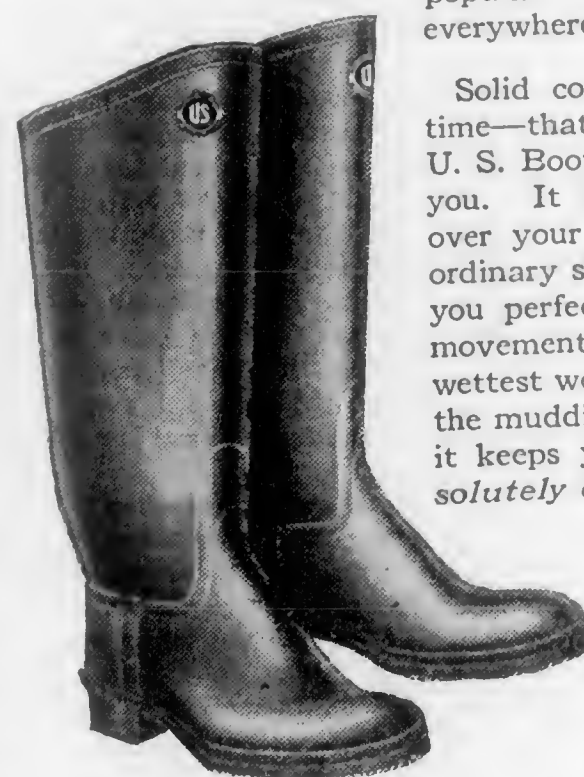
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WHEN the ground is wet, and your job means lots of walking, what sort of footwear do you put on? Ordinary leather shoes get soaked and caked with mud in no time.

For such work you need the lightweight comfort of a shoe combined with the protection of a boot. And here at last is a shoe that gives you this combination—the U. S. Bootee. It's a watertight rubber shoe—designed originally for miners, and now becoming popular with farmers everywhere.

Solid comfort all the time—that's what the U. S. Bootee means for you. It fits smoothly over your sock like an ordinary shoe. It gives you perfect freedom of movement, yet in the wettest weather—over the muddiest ground—it keeps your feet absolutely dry.



"U. S." Boots—Reinforced where the wear is hardest. Made in all sizes and styles—Hip, Half-hip and Knee. In red, black and white.



"U. S." Rubbers—A wide range of models, in light and heavy styles to meet every need. Made in all sizes, for men, women and children.

comfortable they are—examine for yourself their wonderful built-to-wear construction.

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U. S. Boots have all the wear and comfort which the accumulated improvements of 74 years have given them.

U. S. Walrus combine the warmth and convenience of a cloth-top arctic with the protection of a rubber boot. They slip on over your leather shoes, and you can wash them clean instantly while they're still on your feet.

The U. S. line of footwear has a type for every need—arctics, rubbers, "overs." Every one is backed by over half a century of experience. The rubber comes from our own plantations—the whole process of manufacture is supervised by experts.

Always look for the U. S. Seal—it means solid wear and long service for your money.

United States Rubber Company

Look for this seal  on all "U.S." Footwear



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BOSS Work Gloves are exactly suited to farm work. They're tough enough to stand day after day of hard labor such as plowing, building a stone wall, establishing a water system, stretching fencing, or all construction work. Yet they are so flexible that you can tighten a bolt or place a cotter pin with them on.

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THE BOSS WALLOWER—highest quality, heaviest weight canton flannel.
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THE BOSS TIKMIT—Roomy mittens made of ticking that wears like iron.
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TALKS WITH THE BOYS

MR. BARN OWL PAYS FOR HIS LODGING

Several nights while throwing down some hay from the hay loft I had noticed several headless English sparrows lying on the hay just below the cupola in the barn. I supposed that one of the cats which I had often seen about in the barn had caught more of the little pests than she could eat and so had left the remains lying there.

But the next night as I stepped off the ladder I discovered the real slayer of the sparrows, when a large bird flew to the end of the barn and perched himself on the hay-carrier track and then turned his head about to look at me. It was one of those odd-faced barn owls. I knew immediately that he had been catching the sparrows in the evening as they came in to roost in the cupolas, and in the edges of the hay near the blinds, and was glad to know that I had this efficient help in combatting the pesky sparrows.

But what an odd looking bird he was as he sat there, his head turning slowly about following my movements with his small brown eyes. Also their faces are very long which makes their facial expressions like monkeys and in the South they are often called "monkey-faced" owls because of this characteristic.

Their plumage is very soft, yellowish-brown and white, finely speckled and barred.

It was a very cold evening and occasional blasts of wind brushed back the feathers of his side exposing more clearly his long legs. But I knew and was glad of the fact that he had a warm shelter for the night, for as soon as I was gone he would fly back into the barn and begin his search for more late sparrows coming in to sleep for the night, and during the long night he would have many chances to catch playful mice scampering over the hay.

Oh yes! he would be wide awake all night and the morning sun would warn him that it was time to close his eyes, just when all the rest of the world was thinking of another day of activity. It was glad to discover that I had such a valuable ally to help me in reducing the great number of sparrows about the place, and in few weeks the decrease in numbers of these little pests was quite noticeable.—John B. Behrends, Hanna City, Ill.

LETTERS FROM THE BOYS

Dear Editor—I am glad that there is a Boy's Department in Pennsylvania Farmer. I am fifteen years old and have lived on the farm all my life and like farm work very much. I go to school every day.

I would like to get a place on a large farm to work where I could do some trapping in winter. There is always quarreling going on at home and I am getting tired of it. My parents say that if I do not want to stay at home that I could go when the spring comes. Now if any of the other readers know of a farmer or dairyman who needs some one to help, tell him to write to me. Now I hope that all the boys will take a hand in this paper and help make it successful. I love to read about the other boys and the things of this paper. I subscribed for it and I am

never sorry I did, for it is a pleasure to read it.—"George."

We omit printing this boy's name altho he signed the letter and did not tell us not to leave it off. He seems to have courage, but for his own sake we withhold his name. If anyone wishes to write him, send the letter to us and we will forward it. "George" touches a subject that is a cause of trouble in a great many homes. The home life of many a family is unbearable to sensitive, just souls because some of the members get into the habit of quarreling with each other. I wish it were possible to publish a remedy to cure this habit. It not only dwarfs the souls and spoils the lives of those who quarrel, but it makes life miserable for others in the family. The nagging, scolding, quarreling habit is usually the sign of a weak and narrow but egotistical spirit. It can be overcome by those who are big enough to do so by keeping quiet when inclined to say mean things, thinking pleasant thoughts and trying to help instead of hurt others. They should devote more time to reading, music, games, talking about helpful things, etc. These will help cure the diseased mind and to broaden the view so that bigger things than our own petty affairs may be seen and appreciated.—Editor.

Dear Editor—I saw some letters written by boys published in the Pennsylvania Farmer and thought I would try to write one. I am fifteen years old and am in the eighth grade in school. I live in Wilmet Township on a dairy farm of 160 acres. We have fifteen cows, twenty-five sheep and six horses. I take care of the horses and my father and other brothers take care of the cows. I take the milk to the milk-stand every morning, which is about a mile and a half from our home. I have a flock of thirteen chickens of my own, and get six eggs a day. My younger brother has a flock of eight chickens.

I like to trap and hunt. Last year my brothers and I caught \$66 worth of fur and my youngest brother (five years old) got \$13 worth of furs.

We have a traction engine and in the fall we fill our neighbors' silos and I fire the engine while my brother feeds the cutter.

My brothers and I had a yoke of oxen and we thought we would like a colt better, so we sold the oxen as they were almost two years old, and bought a colt four months old, and now we have a nice horse.—Adrian T. Fisk, Bradford Co., Pa.

FAITHFUL TO EACH OTHER

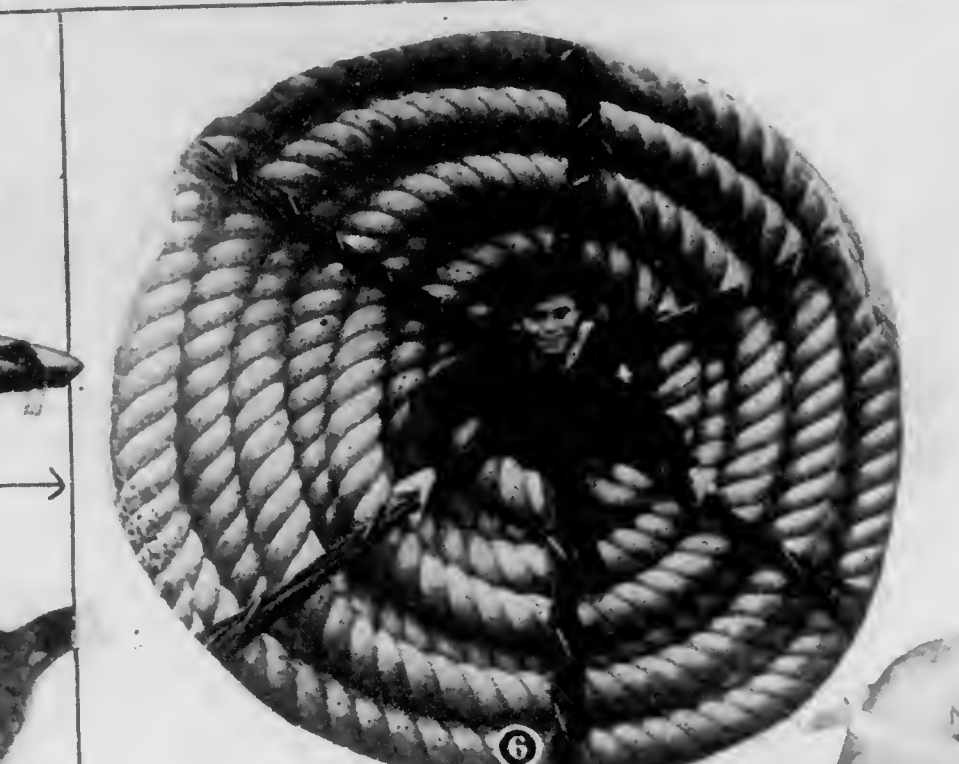
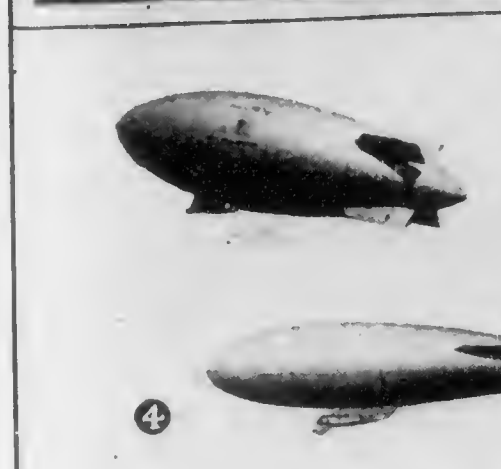
Since publishing the Vest eulogy on the dog we have received the following touching news item:

John Smith, sixty-nine years old, who for years has lived in a lonely cabin in the woods with only a mongrel dog for companion, yesterday applied for admittance to the Ashland County, Wis., Poor Farm, ill health having precluded the thought of existing by his own efforts thru the winter.

"Yes, I guess I can find room for you," the superintendent of the poor farm told Smith, "but you can't bring that dog in."

Smith gazed at his dog. The years had made him almost as decrepit as his master. Tears rolled down the old man's cheeks as he sorrowfully turned away, the dog following him. Last evening the bodies of man and dog were found in the lonely cabin. Smith's old hunting rifles with which he had ended their lives, were beside him.

PASSING EVENTS IN PICTURES



1—Paul Rayfield Johnson and his \$50.00 smile. Paul won one of the daily prizes being given by a Chicago newspaper for the most courteous person it can find.
2—The Prince of Wales (left) and the hounds, ready for a hunt.
3—"Auvorn Vindicator," the 16-month-old Boston Terrier, is said to be the best in Philadelphia.

4—The first race ever staged in the country between dirigible "blimps" took place recently at Long Beach, Cal.
5—If this young reptile gets hold of pussy's nose—Good Night!
6—Coil of 15-inch hawser, strong enough to tow an ocean liner.
7—A sweet potato bearing a remarkable resemblance to a seal.

8—Last photograph of the Czar of Russia and his family. They are shown on the roof of a Greenhouse, trying to get a glimpse of the Siberian sun.
9—Workmen about to transplant a 30-ton elm at Shawshen, Mass.
10—"Queenie" the 900-pound lioness of the Prospect Park Zoo, Brooklyn, N. Y., is having an aching tooth removed.



The Voice of the Pack

by Edison Marshall

CHAPTER XI

THE Lennox home, in the far wilderness of the Umpqua Divide, looked rather like an emergency hospital for the first few days after Dan's fight with Whisperfoot. Its old sounds of laughter and talk were almost entirely lacking. Two injured men and a girl recovering from a nervous collapse do not tend toward cheer.

But the natural sturdiness of all three quickly came to their aid. Of course Lennox had been severely injured by the falling log, and many weeks would pass before he would be able to walk again. He could sit up for short periods, however; had the partial use of one arm; and could propel himself—after the first few weeks—at a snail's pace thru the rooms in a rude wheel chair that Bill's ingenuity had contrived. The great livid scratches that Dan bore on his body quickly began to heal; and before a week was done, he began to venture forth on the hills again. Snowbird had remained in bed for three days; then she had hopped out, one bright afternoon, swearing never to go back into it again. Evidently the crisp, fall air of the mountains had been a nerve tonic for them all.

Of course there had been medical attention. A doctor and a nurse had motored up the day after the accident; the physician had set the bones and departed, and the nurse remained for a week, to see the grizzled mountaineer well on the way of convalescence. But it was an anxious wait, and Lennox's car was kept constantly in readiness to speed her away in case the snows should start. At last she had left him in Snowbird's hands, and Bill had driven her back to the settlements in his father's car. The die was now cast as to whether or not Dan and the remainder of the family should winter in the mountains. The snow clouds deepened every day, the frost was heavier in the dawns, and the road would surely remain open only a few days more.

Once more the three seemingly had the Divide all to themselves. Bert Cranston had evidently deserted his cabin and was working a trap-line on the Umpqua side. The rangers left the little station, all danger of fire past, and went down to their offices in the federal building in one of the little cities below. Because he was worse than useless in the deep snows that were sure to come, one of the ranch hands that had driven up with Bill rode away to the valleys the last of the live stock—the horse that Dan had ridden to Snowbird's defense.

Nothing had been heard of Landy Hildreth, who used to live on the trail to the marsh, and both Lennox and his daughter wondered why. There were also certain officials who had begun to be curious. As yet,

Dan had told no one of the grim find he had made on his return from hunting. And he would have found it an extremely difficult fact to explain.

It all went back to those inner springs of motive that few men can see clearly enough within themselves to recognize. Even the first day, when he lay burning from his wounds, he worked out his own explanation in regard to the murder mystery. He hadn't the slightest doubt but that Cranston had killed Hildreth to prevent his testimony from reaching the courts below. Of course any other member of the ar-

alone.

had an actual sense of duty to do all that he could to stop the activities of the arson ring, his motives, stripped and bare, were really not utilitarian. He had no particular interest in Hildreth's case. He remembered him simply as one of Cranston's disreputable gang, a poacher and a fire bug himself. When all is said and done, it remained really a personal issue between Dan and Cranston. And personal issues are frowned upon by law and society. Civilization has toiled up from the darkness in a great measure to get away from them. But human nature remains distressingly the same, and Dan's desire to pay his debt was a distinctly human emotion. Sometime a breed will live upon the earth that can get clear away from personal vengeance—from that age-old code of the hills that demands a blow for a blow and a life for a life—but the time is not yet. And after all, by all the standards of men as men, not at read in idealistic philosophies—Dan's debt was entirely real. By the light held high by his ancestors,

as the eating places in the berry thickets remain open. The cougars had all gone down with the deer, the migratory birds had departed, and even the squirrels were in hiding.

The scene didn't offer much in the way of clues. Of the body itself, only a white heap of bones remained; for many and terrible had been the agents at work upon them. The clothes, however, particularly the coat, were practically intact. Greeting himself, Dan thrust his fingers into its pockets, then into the pockets of the shirt and trousers. All papers that would in any way serve to identify the murdered man, or tell what his purpose had been in journeying down the trail the night of the murder had been removed. Only one explanation presented itself. Cranston had come before him, and searched the body himself.

Dan looked about for tracks, and he was considerably surprised to find the blurred, indistinct imprint of a shoe other than his own. He hadn't the least hope that the tracks themselves would offer a clue to a detective. They were too dim for that. The surprising fact was that since the murder had been committed immediately before the fall rains, the water had not completely washed them out. The only possibility remaining was that Cranston had returned to the body after the week's rainfall. The track had been dimmed by the lighter rains that had fallen since.

But yet it was entirely to be expected that the examination of the body would be an afterthought on Cranston's part. Possibly at first his only thought was to kill and, following the prompting that has sent so many murderers to the gallows, he had afterwards returned to the scene of the crime to destroy any clues he might have left and to search the body for any evidence against the arson ring.

Dan's next thought was to follow along the trail and find Cranston's ambush. Of course, it would be in the direction of the settlement from the body, as the bullet had entered from the front. He found it hard to believe that Hildreth had fallen in the exact spot where the body lay. Men journeying at night keep to the trail, and the white heap itself was fully forty feet back from the trail in the thickets. Perhaps Cranston had dragged it there to hide it from the sight of any one who might pass along the lonely trail and it was a remote possibility that Whisperfoot, coming in the night, had tugged it into the thickets for dreadful purposes of his own. Likely the shot was fired when Hildreth was in an open place on the trail; and Dan searched for the ambush with this conclusion in mind. He walked back, looking for a thicket from which such a spot would be visible. Something over fifty yards down he found it; and he knew it by the empty brass rifle cartridge that lay half buried in the wet leaves.

The shell was of the same caliber as Cranston's hunting rifle. Dan's hand shook as he put it in his pocket. Encouraged by this amazing find, he turned up the trail toward Hildreth's cabin. It might be possible, he thought, that Hildreth had left some of his testimony—perhaps such rudely scrawled letters as Cranston had written him—in some forgotten drawer in his hut. It was but a short walk for Dan's hardened legs, and he made it before mid-afternoon.

The search itself was wholly without result. But because he had time to think as he climbed the ridge,

A Fable

There is a good story that often is told,
Concerning two frogs which in days of old,
Fell into a pail—by mistake, of course—
But the pail contained cream; and that made things worse.

Now frogs, though they swim in the water you know,
Can't swim forever—it tires them, and so,
One said, "Tis no use, we must certainly die,"
But the other said, "No! to jump out we can try."

Well, the first lost his courage, and sinking was drowned,
But the other kept kicking all right, and was found
Afloat in the morning—and how the maid laughed!
On a big chunk of butter that served as a raft!

His kicking had churned up the cream don't you see?
"I'm glad I kept kicking, I'm sure," then said he.
The maid, when she saw him so bright and so chipper,
Released him by means of a long-handled dipper.

The moral is this—and I hope all will hear it,
The frog that survived had a brave, "kicking" spirit.
And if you would win when things seem to go wrong,
Keep kicking! Keep kicking! and whistle a song!

And maybe the things that seem threatening will turn
To aids, like the cream that the froggie did churn.
But if you lose heart and stop kicking you know,
Like the first little frog to the bottom you'll go.

No matter if everything seems to go wrong,
Keep kicking! Keep kicking! 'Twill change before long!
And so when you're tempted to give up and fail,
Just think of the frogs that fell into the pail!

son ring of hillmen might have been the murderer; yet Dan was inclined to believe that Cranston, the leader of the gang, usually preferred to do such dangerous work as this himself. If it were true, somewhere on that tree-clad ridge clues would be left. By a law that went down to the roots of life, he knew, no action is so small but that it leaves its mark. Moreover, it was wholly possible that the written testimony Hildreth must have gathered had never been found or destroyed. Dan didn't want the aid of the courts to find these clues. He wanted to work out the case himself. It resolved itself into a simple matter of vengeance: Dan had his debt to pay and he wanted to bring Cranston to ruin by his own hand.

While it was true that he took rather more than the casual interest that most citizens feel in the destruction of the forest by wanton fire, and

he could not turn his other cheek. Just as soon as he was able, he went back to the scene of the murder. He didn't know when the snow would come to cover what evidence there was. It threatened every hour. Every wind promised it. The air was sharp and cold, and no drop of rain could fall thru it without crystallizing into snow. The deer had all gone, and the burrowing people had sought their holes. The bees worked no more in the winter flowers. Of all the greater forest creatures, only the wolves and the bears remained—the former because their fear of men would not permit them to go down to the lower hills, and the latter because of his knowledge that when food became scarcer, he could always burrow in the snow. No bear goes into hibernation from choice. Wise old bachelor, he much prefers to keep just as late hours as he can—as long

because as he strode along beneath that wintry sky he had a chance to consider every detail of the case, he was able to start out on a new tack when, just before sunset, he returned to the body. This new train of thought had as its basis that Cranston's shot had not been deadly at once; that wounded, Hildreth had himself crawled into the thickets where Whisperfoot had found him. And that meant that he had to enlarge his search for such documents as Hildreth had carried to include all the territory between the trail and the location of the body.

It was possibly a distance of forty feet, and getting down on his hands and knees, Dan looked for any break in the shrubbery that would indicate the path that the wounded Hildreth had taken. And it was ten minutes well rewarded, as far as clearing up certain details of the crime. His senses had been trained and sharpened by his months in the wilderness, and he was able to back-track the wounded man from the skeleton clear to the clearing on the trail where he had first fallen. But as no clues presented themselves, he started to turn home.

He walked twelve feet, then turned back. Out of the corner of his eye it seemed to him that he had caught a flash of white, near the end of a great, dead log beside the path that the wounded Hildreth had taken. It was to the credit of his mountain training alone that his eye had been keen enough to detect it; that it had been so faithfully recorded on his consciousness; and that, knowing at last the importance of details, he had turned back. For a moment he searched in vain. Evidently a yellow leaf had deceived him. Once more he retraced his steps, trying to find the position from which his eye had caught the glimpse of white. Then he dived straight for the rotten end of the log.

Into a little hollow in the bark, on the underside of the log, some hand had thrust a small roll of papers. They were rain soaked now, and the ink had dimmed and blotted; but Dan realized their significance. They were the complete evidence that Hildreth had accumulated against the arson ring—letters that had passed back and forth between himself and Cranston, a threat of murder from the former if Hildreth turned state's evidence, and a signed statement of the arson activities of the ring by Hildreth himself. They were not only enough to break up the ring and send its members to prison; with the aid of the empty shell and other circumstantial evidence; they could in all probability convict Bert Cranston of murder.

For a long time he stood with the shadows of the pines lengthening about him, his gray eyes in curious shadow. For the moment a glimpse was given him into the deep wells of the human soul; and understanding came to him. Was there no balm for hatred even in the moment of death? Were men unable to forget the themes and motives of their lives, even when the shadows closed down upon them? Hildreth had known what hand had struck him down. And even on the frontier of death, his first thought was to hide his evidence where Cranston could not find it when he searched the body, but where later it might be found by the detectives that were sure to come. It was the old creed of a life for a life. He wanted his evidence to be preserved—not that right should be wronged, but so that Cranston would be prosecuted and convicted and

made to suffer. His hatred of Cranston that had made him turn state's evidence in the first place had been carried with him down into death.

As Dan stood wondering, he thought he heard a twig crack on the trail behind him, and he wondered what forest creature was still lingering on the ridges at the eve of the snows.

CHAPTER XII

The snow began to fall in earnest at midnight—great, white flakes that almost in an instant covered the leaves. It was the real beginning of winter, and all living creatures knew it. The wolf pack sang to it from the ridge—a wild and plaintive song that made Bert Cranston, sleeping in a lean-to on the Umpqua side of the Divide, swear and mutter in his sleep. But he didn't really waken until Jim Gibbs, one of his gang, returned from his secret mission.

They wasted no words. Bert flung aside the blankets, lighted a candle, and placed it out of the reach of the night wind. It cast queer shadows in the lean-to and found a curious reflection in the steel points of his eyes. His face looked swarthy and deep-lined in its light.

"Well?" he demanded. "What did you find?"

"Nothin'." Jim Gibbs answered gutturally. "If you ask me what I found out I might have somethin' to answer."

"Then—" and Bert, after the manner of his kind, breathed an oath—"what did you find out?" His tone, except for an added note of savagery, remained the same. Yet his heart was thumping a great deal louder than he liked to have it. He wasn't amused by his associate's play on words. Nor did he like the man's knowing tone and his air of importance. Realizing that the snows were at hand, he had sent Gibbs for a last search of the body, to find and recover the evidence that Hildreth had against him and which had not been revealed either on Hildreth's person or in his cabin. He had become increasingly apprehensive about those letters he had written Hildreth, and certain other documents that had been in his possession. He didn't understand why they hadn't turned up. And now the snows had started, and Jim Gibbs had returned empty-handed, but evidently not empty-minded.

"I've found out that the body's been uncovered—and men are already searchin' for clues. And moreover—I think they've found them." He paused, weighing the effect of his words. His eyes glittered with cunning. Rat that he was, he was wondering whether the time had arrived to leave the ship. He had no intention of continuing to give his services to a man with a rope-noose closing about him. And Cranston, knowing this fact, hated him as he hated the buzzard that would claim him in the end and tried to hide his apprehension.

"Go on. Blat it out," Cranston ordered. "Or else go away and let me sleep." It was a bluff; but it worked. If Gibbs had gone without speaking, Cranston would have known no sleep that night. But the man became more fawning.

"I'm tellin' you, fast as I can," he went on, almost whining. "I went to the cabin, just as you said. But I didn't get a chance to search it—" "Why not?" Cranston thundered. His voice re-echoed among the snow-wet pines.

(Continued Next Week).

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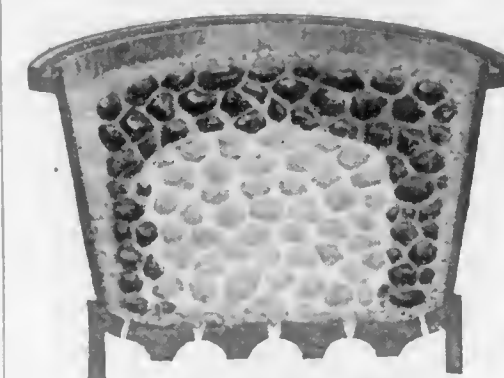
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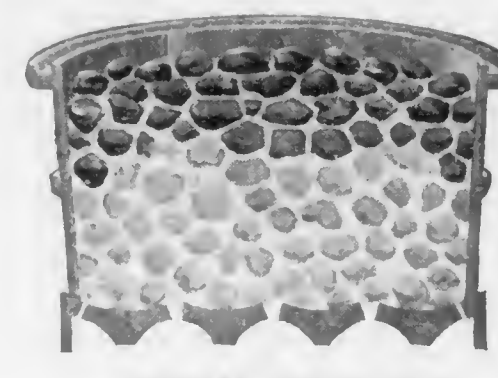
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Builds you'll like. Works done in one-half the time. Built of all steel and iron like the \$500 mixers but simpler. The Leader of Little Mixers. Perfect work in any class of mixing. Employs Clean, Hatch of about 3 cubic ft. a minute. Only practical mixer for farmer or contractor. Satisfaction guaranteed or money refunded. Write for circular or order from this advertisement to avoid delay.

THE LITTLE WHIRLWIND MIXER CO.
441 East St.
LA CROSSE, WIS.

Detroit Incubator \$12.45

140-Egg Size—Guaranteed—has double walls, copper tank, full-size nursery, automatic regulation thermometer held so that chicks cannot break it when hatching. Detroit Brooders, too. Double walled, hot water heated. Write for special low prices on both machines.

Detroit Incubator Co.
Detroit 13, Merritt St., Detroit, Mich.

Army Auction Bargains

Ten .45's up to .526
Saddles, 6.50
Army Haversack, 15c
Knapsacks, 75c
Slickers, 1.85
Army Gun Sling, 30c
Saddle, 1.75
25 acres army goods. Large illustrated catalogue reference catalogue 100 pages—free. \$2.50, mailed free. New Circular 10c.

Francis Baermerman Sons, 501 Broadway, New York

Celluloid Legbands

Tell me of hens on sight. 10 colors. State label. Circular free. N. Y. 20-10c. 100-11c.

Spiral Co., Huqueont Park, N. Y.

CANNIBALISM

Poultry Editor, Pennsylvania Farmer: Will you please tell me a remedy for cannibalism among chickens? I have S. C. W. Leghorns and have been troubled for some time by the hens trying to eat each other. I feed them a scratch feed of cracked corn and oats regularly and keep a good dry mash, oyster shells and grit before them all the time.—Eugene Eter, Franklin Co., Pa.

E. E. Franklin Co., Pa.—Cannibalism among fowls is most prevalent among young stock but may occur in the form of feather eating among mature fowls. A slight injury to one bird may cause constant pecking from other hens to obtain the blood. Isolate any hens that start the habit or it will spread rapidly. The hens need plenty of meat food and exercise to detract their attention from each other. Try hanging a piece of beef from the ceiling so the hens can peck at it. Examine the birds for lice as that is considered a common cause of feather pulling.

If the hens are closely yarded it will be difficult to cure the habit. Turn them out to range if possible. It seldom happens in a healthy free range flock. It will pay to kill and market birds that persist in the habit and start with new stock which will probably not start it if they have exercise and a balanced ration.

BALANCING THE RATION

We read that 25 lbs. each of wheat, oats, corn and barley, on an average, will produce 224 yolks of eggs, and 154 whites of eggs. Now, can you tell me what to feed to produce an equal number of whites? No doubt a protein food is required, but what food is it that contains this required amount of protein? If I can learn this I think I can bring my hens up to their maximum efficiency.—J. N. C., Center Co., Pa.

The use of a balanced ration containing scratch grain, and mash is supposed to produce approximately the same number of whites as yolks. For example there is a commercial grain mixture and egg mash advertised on that basis. 100 pounds of wheat, corn, barley and kafir are supposed to produce 239 yolks and 147 whites.

They balance their mixtures so that 50 pounds of the scratch grain is supposed to make 123 yolks and 71 whites. Fifty pounds of the dry mash is supposed to make 91 yolks and 141 whites. By adding it is found that 100 pounds of the feed consisting of 50 pounds of the mash and 50 pounds of the scratch grain will produce 214 yolks and 212 whites.

In theory it is alright and the mash does make hens lay. But we learn by practical experience with our flocks that hens are different and the same ration will not produce equal results when fed to different individuals. In other words, you cannot feed a hen a certain ration and know she will produce so many whites and so many yolks. She may get the ration to do it but she simply does not use the ration for the purpose given. She might produce more or less eggs than could naturally be expected from her.

Here is a dry mash mixture that will give good results: 100 lbs. middlings, 100 lbs. bran, 100 lbs. corn meal, 100 lbs. ground oats, 60 lbs. meat scrap, 50 pounds gluten meal, 1 lb. salt.

Poultrymen generally use from 10 to 20 per cent of beef scrap in the dry mash, depending on the grade of the beef scrap and breed of poultry. Leghorns seem to stand more beef

Live, Grow, Lay and Pay!

—that's the whole history of a Hillpot Quality Chick

Pleased customers write how well they thrive—how quickly they grow—how soon these pullets begin to lay steadily. Of course they pay.

HILLPOT QUALITY CHICKS

	25	50	100
White or Black	\$6.00	\$11.00	\$22.00
Leghorns	6.25	12.50	25.00
Brown Rocks	7.50	14.00	28.00
Buff Rocks	7.50	14.00	28.00
R. I. Reds	8.00	15.00	30.00
W. Wyandottes	9.50	18.00	35.00
White Rocks	9.50	18.00	35.00
Black Minorcas	9.50	18.00	35.00

Hatched right—from Hillpot Heavy-Laying Strains.

Hatching dates, March 9, 16, 23.

We guarantee safe delivery anywhere within 1200 miles, postpaid. Write for my free book—full of valuable information and surprising profit hints.

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CRESTWOOD BABY CHICKS
Superlative quality, husky chicks, from large, vigorous, red-combed, heavy-laying Barrow S. C. White Leghorn flocks, \$18 per 100; \$85 per 500. Partridge Post Prepaid. 100 per cent live delivery guaranteed. 10 per cent bonus orders shipped. CRESTWOOD FARM, Box 55, Schaafstown, Pa.

Smith's Quality Chicks S. C. White Leghorns, strong healthy vigorous chicks, from heavy laying strains. Safe delivery and satisfaction guaranteed. Order now to insure prompt delivery. Lakewood Poultry Farm, Mahanoy City, Pa., R-1

S.C.R.I. Reds—SALE—Barred Rocks
Several fine breeding pens of 5 pullets and cockerels. Purebred stock, now laying. First choice, \$20. R. K. WIRT, R-6, BOX 15, HARRISBURG, PA.

Single Comb White Leghorns
Ten week old pullets. Tired from stock with high records. None better filling the egg basket. Also baby chicks. Circular free. **H. M. KUHN,** SYCAMORE, OHIO

Sicilian Buttercups
Farm range, prize winning Buttercups. Invaluable for the poultry raiser. Write for circular. **MAPLE LAWN FARMS,** CORTLAND, N. Y.

DAY OLD CHICKS AND HATCHING EGGS, white Leghorns, Barred Plymouth Rocks, Rhode Island Reds. Safe delivery guaranteed. Place orders now to insure prompt delivery. **PARADISE POULTRY FARM,** Box C, Paradise, Pa.

PURE BLOODED Bantam, Narragansett, Bourbon Red, White Holland, Black and Silver breeding turkeys. These are from the finest flocks in America, and will please the most careful buyer. Write for special prices. **F. A. CLARK, XENIA, OHIO, R-5.**

BEST BABY CHICKS
Book orders now. 112 healthy Chaps from first to last. Write for price. Circular free. **MISS IDA CHUMBLEY,** MAGNOLIA HATCHERY, Magnolia, Ill.

MAMMOTH BRONZE TURKEYS
for sale. "GOLDEN" strain. Large frame and bone. **DRAPER, VIRGINIA.**

EGGS FOR HATCHING from high productive Barrow Strain S. C. W. Leghorns, mated to high producing cockerels, the proven world's greatest laying strain. \$8 per 100; \$2.50 per 15, prepaid. **Maple Springs Poultry Farm, Stewartstown, Pa.**

BABY CHICKS
Hatched from free range stock. Quality and live delivery guaranteed. Write for catalogue. **STILLWATER HATCHERY,** Covington, Ohio

BARRON WHITE LEGHORNS. An egg a day. This is America's best-laid egg. Write for circular. **Wm. D. Seidel, R-7, Strawberry Ridge, Pa.**

BIG STURDY BABY CHICKS and Hatching Eggs. Marlin's White Wyandottes, Ringneck, Barred Rock, S. C. Bantam, Anconas, Bluebelly White Leghorns. First hatch Feb. 15th. Write for circular. **SUNNY SIDE POULTRY FARM, Cooper Hill, N. J.**

800-000 CHICKS—Blue Hen Hatched for 1921. Leghorns, Rocks, Minorcas, Anconas, etc., at rock bottom prices. Satisfaction and safe delivery guaranteed. **Philly Hatchery, Dept. 12, Richmond, Pa.**

Selby Service Satisfies Ship as your own. Eggs, Poultry and a specialty. Returns day old. **SELBY PRODUCE CO., PHILADELPHIA**

60 BREEDS Pure-bred Chickens, ducks, geese, turkeys, guinea fowls, and more. A fine illus. & desc. book on 150 pages. 10c. Art. Book Catalogue 10c. Both for 15c. Postpaid. Price list free. **Edwin A. Souder, Sellersville, Pa.**

scrap without bad effect than some of the heavier breeds.

DAMP FLOORS

Our experience with damp floors may be of value to those who have had trouble of this kind. Last year we had 275 pullets in a pen on the second floor. The floor was double with roofing paper between, the upper or service floor made of matched flooring very carefully laid. The stables below were well ventilated.

There were windows on two sides, one side or the other always open, depending on the direction of the wind. The windows on one side when open to their widest were 3x18 feet. Yet, in spite of all we could do the floor and litter became very damp, not to say wet, and necessitated frequent change of litter.

The same birds, now yearlings, are in that pen at this time, together with 50 more—325 in all, and it is one of the driest we have. This is the face of the fact that we are having a great deal more rain and damp weather this season than last.

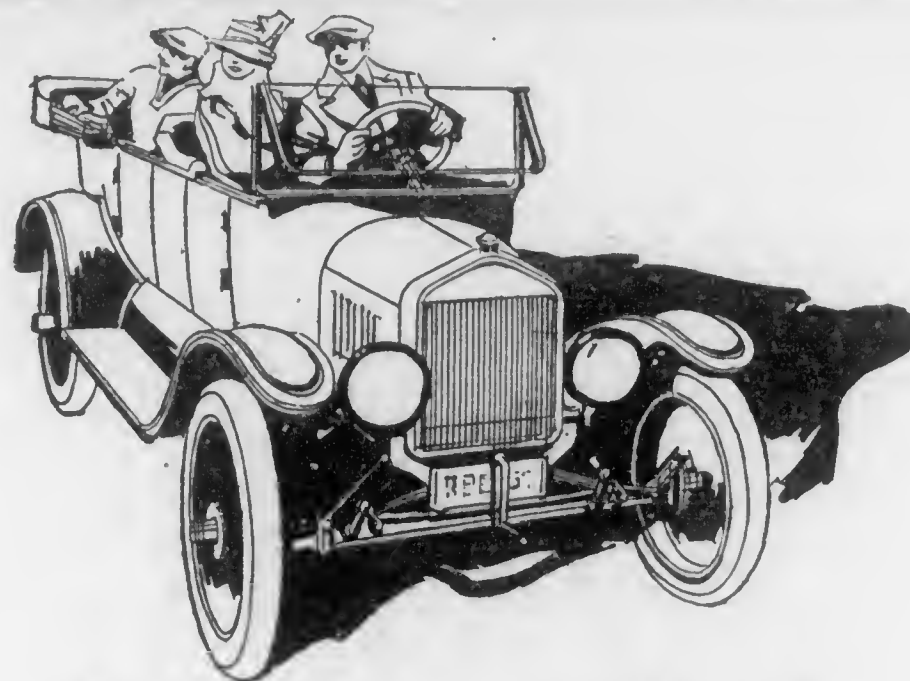
Pen No. 6, on the ground level, contains 400 pullets. The floor is of concrete with concrete walls three feet high; the rest is of lumber. Windows on the southeast 3x24 ft., most of them open at all times. In severe storms half of them closed with glass sash, the remainder on similar occasions somewhat protected by very coarse woven burlap. Our experience of last year is repeated. The litter becomes damp and foul and rarely lasts in a fit condition longer than a week.

Those two examples would suggest that pullet pens are more likely to be damp than pens containing older birds. Pullets, as a rule, lay better during the fall and winter; they require more feed and drink much more water. No water, no eggs. But, though the egg is so largely made of water, they drink much more than for their immediate bodily needs and to store in the eggshell. The excess is, of course, voided, and dampness is one of the results.

Our present pullet pen was built about 15 years ago and the concrete is thoroughly dry. It was intended and served originally for a hog stable, accommodating 40 swine in 8 pens. As soon as it was finished and the swine put in the trouble began. Ceiling and walls dripped with moisture in milder days and were white with frozen vapor in cold weather. We determined to put in good ventilators as soon as warmer weather came; but there was a rush of spring work and nothing was done. The following winter, with no change, our hog house was as dry as a chip; and as long as it was used for hogs there was no more trouble.

The explanation is simple. A great deal of water goes into concrete. Although the concrete sets and becomes hard enough to permit use of the building, the water largely remains and is given off slowly and steadily as hardening progresses. Any one who makes a concrete floor may easily determine this. When the floor has become hard and apparently dry, lay down a newspaper or a piece of roofing. In a few days take it up and note the result. You will find the under side of the paper damp, almost wet. The surface of the floor will likewise show moisture. The water on its way out was stopped by the paper and could not escape.

A board floor tight enough to be warm for the hens will suffer very little from lack of ventilation beneath it.—Howard Mitman.



Protect your Ford engine from this abuse

CARRYING you there and back on long, fast trips, doing errands all about town, always on the job—that's your Ford when you treat it fairly.

The Ford has a remarkable engine, compact and finely made. When overheating, excess carbon, pounding bearings tax temper and pocket book, it is nine chances to one that you have been using inferior oil.

Under the intense heat of the engine—200° to 1000° F.—ordinary oil forms great quantities of black sediment. Sediment has no lubricating

value. It causes premature wear which will cut the life of your engine in two.

You can eliminate engine trouble from this source. Sediment is reduced 86% when you use Veedol, the lubricant that resists heat. (See the two bottles below.)

Have your engine flushed out to cleanse it of grit, sediment and thickened oil. Put in Veedol. Leading dealers have it in stock. Ask today for a supply of Veedol.

Veedol lubricants for every part of the car

Use Veedol lubricants for all parts of the car: VEEDOL for the engine (light, medium, heavy, special heavy, extra heavy); for the differential and transmission VEEDOL TRANS-GEAR OIL or GEAR COMPOUND; for the tractor and truck WORM DRIVE OIL; GRAPHITE GREASE; CUP GREASE.



Ordinary oil after use. Veedol after use. Showing sediment formed after 500 miles of running.

TIDE WATER OIL

Sales Corporation

1543 Bowling Green Bldg., New York City
Branches or distributors in all principal cities of the United States and Canada

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From the World's Largest Producers. Delivered at your door, anywhere. We pay the Parcel Post charges.

Barred Rocks White Wyandottes
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Buff Rocks Black Minorcas
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White Leghorns Buff Orpingtons
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Write nearest address, today, for Standard (circularized) catalog—FREE.
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IT IS AN INVESTMENT

to buy hatching eggs and day old chicks from our flocks, selected and examined carefully, to insure satisfaction and profit to our customers. We offer WHITE WYANDOTTES (Marlin Fishel strain). Pen A—Yearling trapnest record line. \$18.00 per 100; \$2.50 per 15, prepaid. CHICKS, 50c each. Pen B—Trapped, standard size pullets, mated to Fishel cock birds. EGGS, \$30 per 100; \$4.50 per 15, prepaid. CHICKS, 50c each. Pen C—Trinity flock. EGGS, \$15 per 100; \$2.25 per 15, prepaid. CHICKS, 40c each. White Leghorns, utility flock, averaging 70 per cent eggs, mated to Hattie of Jones line. EGGS, \$12 per 100; CHICKS, 30c each.

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We pay the Postal Charges.
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THOROBRED CHICKS
Penful and vigorous from free range, heavy egg-producing lines.
Anconas, Black Minorcas \$25 per 100
Barred Rocks, R. I. Reds, \$24 per 100
White, Brown, Buff Leghorns, \$30 per 100
By special delivery, parcel post—prepaid. Guaranteed 100 per cent live delivery. 25 per cent will be order any week.
SHERIDAN FARMS, SHERIDAN, PA.

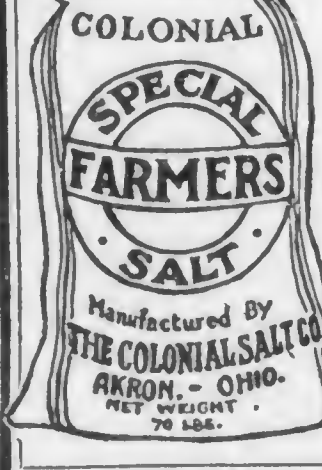
BABY CHICKS Black and White Leghorns from my own stock. Black Leghorn chicks from pen of selected hens and prize winners. Prepaid. Hatching eggs reasonable. Circular free.
PIELL BROS., PITTSBURGH, N. J.



All Pure Salt

No Lumps, No Grit, No Moisture

When you buy Colonial Special Farmer's Salt you get just what you pay for—pure salt, in fine, flaky grains, without adulteration of any kind.



COLONIAL SPECIAL FARMER'S SALT

A Better Salt for Every Farm Purpose
Prepared especially for farm use, it gives a finer taste to butter, better keeping quality to cured meats and just the right flavor to cooking and baking. The 70 pound bags in which it is packed are convenient to handle, prevent waste by spilling and leaking, keep the salt in good condition free from lumps and make fine towel material when empty.

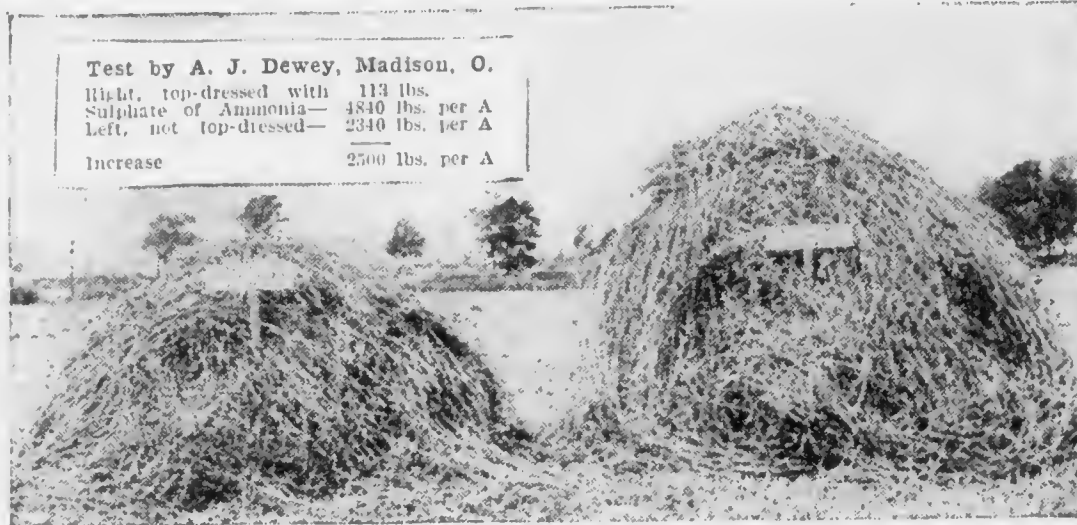
Always Ask For This Brand. If your dealer does not have Colonial Special Farmer's Salt, write us, giving his name. Don't accept a cheap substitute. Cheap salt won't do the work. Use the best and be satisfied. Manufactured by **THE COLONIAL SALT CO., Akron, Ohio**
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SOY FOR YOUR LOCALITY 3 1/2 bu. PER BU. **BEANS** EARLY SUGAR CORN SEED. Carefully selected. **THE FOWLER FARMS, MACUNGIE, PA.** WM. MATLACK, JR., Moorestown, N. J.

Please Mention Pennsylvania Farmer When Writing to Advertisers

TOP-DRESSING TALK No. 5

Nitrogen Helps the Meadow



Timothy and other hay crops, like the grains, need a plentiful supply of quickly available nitrogen early in the season, and a top-dressing of Sulphate of Ammonia, applied as soon as the frost is out of the ground, will often greatly increase the profits from the meadow.

In fertilizer demonstrations on 10 Ohio farms of various soil types, an average of 110 lbs. Sulphate of Ammonia per acre gave an increase of 1,646 lbs. of timothy. In every instance the top-dressing was profitable and on some soils the response to nitrogen was remarkable.

Arcadian Sulphate of Ammonia is the ideal top-dressing fertilizer. The analysis is 25 1/2% ammonia guaranteed. The ammonia is in an all soluble, quickly available and non-leaching form.

Arcadian is fine and dry and can be applied by hand or machine easily and uniformly. The amount recommended for the hay crop and for grains is from 50 to 150 lbs. per acre depending upon the natural fertility of the soil. For pasture lands 50 to 100 lbs. per acre is advisable.

ARCADIAN IS FOR SALE BY

PENNSYLVANIA: Philadelphia—Baugh & Sons Co., I. P. Thomas & Son Co., S. M. Hess & Bro., Inc., J. E. Tygart Co.; Reading—Reading Bone Fertilizer Co.; York—York Chemical Co. NEW YORK: New York—The Coe-Nortimer Co., The American Agricultural Chemical Co., Nassau Fertilizer Co., W. E. Vliam Co., Patapasco Guano Co., The National Fertilizer Co., Bowker Fertilizer Co., Frederick Ludlam Co., Virginia-Carolina Chemical Co., Syracuse—F. S. Royster-Guano Co. NEW JERSEY: Chrome—Armour Fertilizer Works (Address Baltimore, Md.), Newark—Listers Agricultural Chemical Works, Trenton—Trenton Bone Fertilizer Co., Woodstown—South Jersey Farmers' Exchange, MARYLAND: Baltimore—American Agricultural Chemical Co., Armour Fertilizer Works, Bowker Fertilizer Co., Hume Fertilizer Chemical Co., Listers Agricultural Chemical Works, Pollock Fertilizer Co., Patapasco Guano Co., F. S. Royster Guano Co., Swift & Co., R. A. Woolridge Co., Rasin Monumental Co., Baugh & Sons Co., Hagerstown—Central Chemical Co.

Write Desk No. 41 for free booklet No. 27, "How to Increase the Yield of Timothy."

The **Barrett Company**

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AGRICULTURAL DEPARTMENT, NEW YORK

Good Fences Boost Farm Profits

Modern, profitable farming requires efficient fencing. Crops must be rotated, fields pastured, wasteful fence rows eliminated. Every field should be fenced hog-tight,—made available for every purpose.



"Pittsburgh Perfect" Electrically Welded Fencing

enables you to farm every field scientifically. It is easily erected, neat, effective and durable.

"Pittsburgh Perfect" Electrically Welded Fencing is manufactured by us from the ore to the finished product. It is electrically welded at every joint, thus eliminating all surplus weight. A perfected fence of uniform high quality, and every rod guaranteed. Made in heights and designs for every purpose. Sold by dealers everywhere. Write for Catalog No. 201.

Pittsburgh Steel Company
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Annual White Sweet Clover
Guaranteed Seed of Hughes Variety
Makes the growth in one season that ordinary clover does not. Write at once before limited supply is exhausted. The DeGraff Food Co., DeGraff, O.

For Sale—Frost Proof Cabbage Plants
Early Jersey Wakefield, Charleston Wakefield, Succession and Flat Dutch, at \$1.50 per 1000 express collect. Parcel post paid, 100 at 35c; 500 at \$1.50; 1000 for \$2.25.
C. J. & C. W. HALEY, MARTIN'S POINT P. O., S. C.

FARM LABOR—A SOCIAL SURVEY

(Continued from Page 2).

more and more favor and many of the best hotels in the country are largely equipped with them. See Note 2).

The improvement which is most important to the housewife is running water. This makes it possible for her to have hot water by putting a fireback in the range and also saves her much effort in pumping.

Wages

The most concrete problem which the farmer has to meet in reference to his employment problems is that of cash wage. One large operator expressed the opinion that the whole problem of employment was one of money and if the farmer was willing to pay enough money he could get all the men he wanted. There is no doubt but that this is true. At the same time, there is no doubt but that there are other considerations beside money.

If a man were paid enough money, he would be willing to live in a hole in the ground, but it is an assured fact that it would be more economical to pay him less money and offer him a better place to live. Therefore, in the matter of wage, it must be considered in conjunction with other inducements such as housing, privileges, possibilities of promotion, recreation and general social conditions. There is a point which would give the greatest efficiency from a standpoint of maximum production with a minimum outlay of expense.

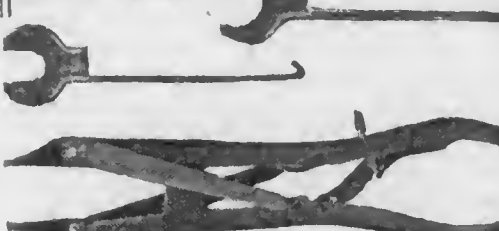
Data secured shows that there has been approximately 100 per cent increase in the cash wage since 1915. The increase in the cost of necessities of life, have also been approximately 100 per cent. Farmhands, generally express the opinion that it is more difficult to save money now than it was five years ago when they were receiving only one-half of the present amount in cash.

This is due largely to the fact that the farmhand spends almost his entire income on items of food and clothing, such as sugar, flour, meat and shoes, which have increased more than 100 per cent. The average wage paid, not considering bonuses or earnings of other members of the family, is \$795 a year in cash. This is practically fifteen dollars per week. The average value of privileges as estimated by the farm hand is \$228 a year. These vary from \$95 to \$437 according to the privileges allowed by individual farmers. Unfortunately, the larger privileges are not always found in the tenant families having the greater number of children. Three cases may be cited as illustrations; one family of eleven have a total income, counting privileges and extra earnings of \$1211 a year—another family of nine, all of them large enough to be good eaters, have a total income of \$1125 and still another family of nine have a total income of only \$1061. One colored family of six children and two adults have a total yearly income of \$965. This family said it would be impossible for them to make ends meet without help from charity.

The farmer who is most successful is the farmer who recognizes that he must have farmhands if he would make any money himself and who is willing to furnish conditions which will secure his labor even in competition with industry. It must be remembered that working people today are demanding better conditions

YOU WILL NEED THIS VALVE LIFTER

Extra Jaws

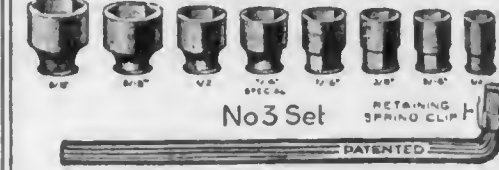


Universal Lifter \$2.25
With Extra Jaws, postpaid

FORD
Size Prepaid

Valve cannot slip when raised. Jaws open in parallel position. Self-locking device permits the free use of both hands while valve is raised and held in desired position.

YOU CAN USE THIS HANDY SOCKET WRENCHES



No. 3 Set \$2.25

Postpaid. Sockets are turned from the bar and heat treated which makes them less liable to break or split under severe usage. Packed in handy tool bags.

MONEY BACK GUARANTEE

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P. O. Box 175 TRENTON, N. J.



\$298
Post Paid

Half-Price Spring Shoe Sale

Record breaking shoe values for Spring! Just one half of what you had to pay last season. Tremendous money-saving values for every member of the family. Don't spend a penny for shoes until you have seen our F&E catalog. The money-saving opportunities will surprise you. All the latest styles at lower prices.

Send a Post Card for our FREE Catalog!

THE LOMBARD MAIL ORDER CO.

Dept. 1500, Baltimore, Md.



EVERBEARING STRAWBERRIES
\$1000 per acre
Plants by mail, postpaid
SPECIAL OFFER

Our Selection Best Varieties for Home and Market
100 Plants - \$2.50
200 Plants - \$4.25
300 Plants - \$6.00

Best Up-to-Date Standard Varieties (Not Everbearing) (Our selection.)
100 Plants, \$1.25; 200 Plants, \$2.10; 300 Plants, \$2.95. Catalog Free.

Only Best Varieties. Home of the Everbearing. Introducing of Progressive.

C. N. Flansburgh & Son, Jackson, Mich.



\$22.00 FOR THIS FINE FUR COAT
Made-to-order from your own coat or boreo hide to your own measure. We too and manufacture the raw hide into a warm serviceable coat for this small charge.

SEND US YOUR HIDES
We make up any kind of skin to suit your individual desire—

Also Ladies Coats and Furs, Auto Robes, Etc.
We have been leaders in the fur business since 1875 and guarantee satisfaction.

FREE Book of styles of Men's and Women's Furs.
Write for it today
Reading Robe & Tanning Co.
136 East St.
Reading, Mich.

as expressed both in wage and living conditions than they were five years ago. It might be well here to quote from a speech delivered by Ambassador Geddes, who says:

"So far only the the swell of the storm centered in Europe laps your coasts, yet your daily press is already filled with news of strikes and what is vaguely called industrial unrest * * * In Europe we know that an age is dying. Here it would be easy to miss the signs of coming change, but I have little doubt that it will come. A realization of the aimlessness of life lived to labor and to die, having achieved nothing but avoidance of starvation and the birth of children also doomed to the weary treadmill, has seized the minds of millions."

There is nothing constructive in the argument of the farmer that city industries and government are taking away his labor. This condition exists and cannot be changed by the farmer. Neither is it of advantage to the farmer to allow his land to remain idle. The policy of not farming land with present prices and present prospects of market simply because farm labor cannot be secured at a figure which the farmer may consider sufficient is decidedly shortsighted. Not only does the value of the farm depreciate much more than the difference in the cost of securing labor would be, thru not being cultivated, but the profit of farming is also lost. It is true that there is an actual shortage of labor on the farms. This is primarily due to a culmination of circumstances resulting in the present crisis. For years the farm has been backward in the opportunities and conditions given to its labor. It has offered no inducement to the ambitions, industrious young man who wishes to accumulate wealth and has no capital to start.

There is no constructive value in condemning human traits which may seem to be selfish. As stated previously, people are going to get all they can for the least possible effort. The farmer is prone to condemn the farmhand for leaving conditions which did not offer him any possible outlet for his ambition. He also often condemns the wife of the farmhand, because she is not willing to earn a little extra for the family by outside work. This point of view is entirely negative and can in no way better labor conditions on the farm.

Hours

Other than the question of wage the farmhand is most concerned with the long hours which are demanded of him. On most farms, the minimum for field work is ten hours per day. This does not include approximately one hour for chores and barn work. When compared with the 8-hour day of industry, it is easy to see why the farmhand objects to the long hours of the country. (Note 3).

Note 3—Much can be said in favor of shorter hours on the farm, but comparison of working hours for city and country should take into consideration the fact that the farm laborer is at home when his day's work is done while the city laborer often has a tedious ride both night and morning, which materially lengthens his day. It may also be said that shop workers, as a rule, need shorter hours than field workers on account of the monotony and tension of their work. Even in industry, the eight-hour day is not the rule as a very large percentage especially of the less skilled class still work nine and nine and one-half hours.

(Continued Next Week).

Keep The Boy In School

THE pressure of urgent spring work is often the cause of keeping the boy out of school for several months. It may seem necessary—but it isn't fair to the boy! You are placing a life handicap in his path if you deprive him of education. In this age, education is becoming more and more essential to success and prestige in all walks of life, including farming.

Should you feel that your own education was neglected, through no fault of yours, then you naturally will want your children to enjoy the benefits of a *real education*—to have some things you may have missed.

With the help of a Case Kerosene Tractor it is possible for one man to do more work, in a given time, than a good man and an industrious boy, together, working with horses. By investing in a Case Tractor and Grand Detour Plow and Harrow outfit now, your boy can get his schooling without interruption, and the Spring work will not suffer by his absence.

Keep the boy in school—and let a Case Kerosene Tractor take his place in the field. You'll never regret either investment.

J. I. Case Threshing Machine Company
Dept. C 24 Racine, Wisconsin

CASE

KEROSENE TRACTORS

"NOTICE: We want the public to know that our plows and harrows are not the Case plows and harrows made by the J. I. Case Plow Works Co."

World's Best Roofing

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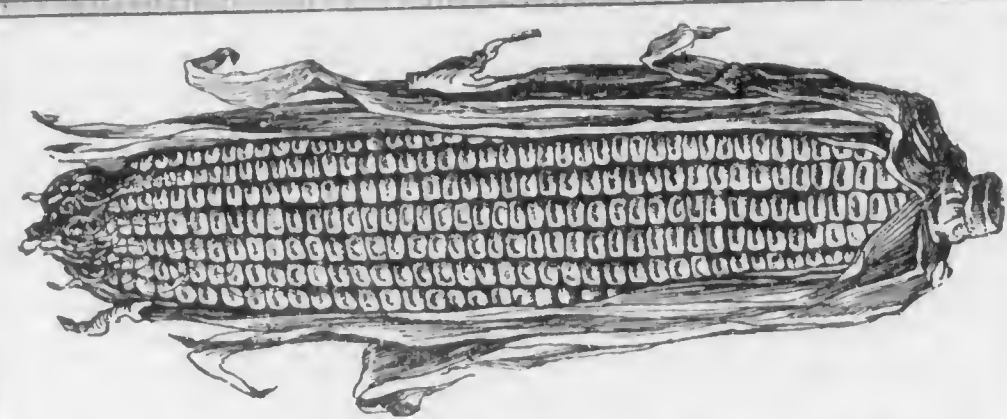
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That conform strictly to seed laws of all states. Clover, Alfalfa, Timothy, Alfalfa, Soy Beans and all kinds of PURE FARM SEEDS. Twenty-five years selling seeds and satisfaction. Write for free samples.
THE A. C. HOYT COMPANY
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200 PROGRESSIVE peddled over-bearing strawberry plants, \$1.50 postpaid. 1000 \$5.00 not prepaid.
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S For Silo and Milking Machine Salesmen, Etc.

Write me and cash in on information I will pay you you get but cannot use in your line. for it and not interfere with your regular business. One man only in each territory. A real business proposition. Correspondence strictly confidential. Write me at once telling me what you sell and what territory you travel.
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Your crops need thirteen different chemical elements—or foods. Of these thirteen, ten are already in your soil in abundance.

Without the other three—Ammonia, Phosphoric Acid and Potash—you cannot possibly profit by the ten you already have!

These three foods you can best supply in Dempwolf's Fertilizers. Add these foods to what your soil already has and you can produce bountiful crops. Without them, your crops must practically starve, no matter how well you care for them otherwise.

For 50 years, we have been furnishing Dempwolf's Fertilizers to the best farmers of this section. We surely know our business, and you can just as surely profit by the knowledge of fertilizers we have gained in all these 50 years.

Write us for information that will enable you to get exactly the right fertilizer for your needs.



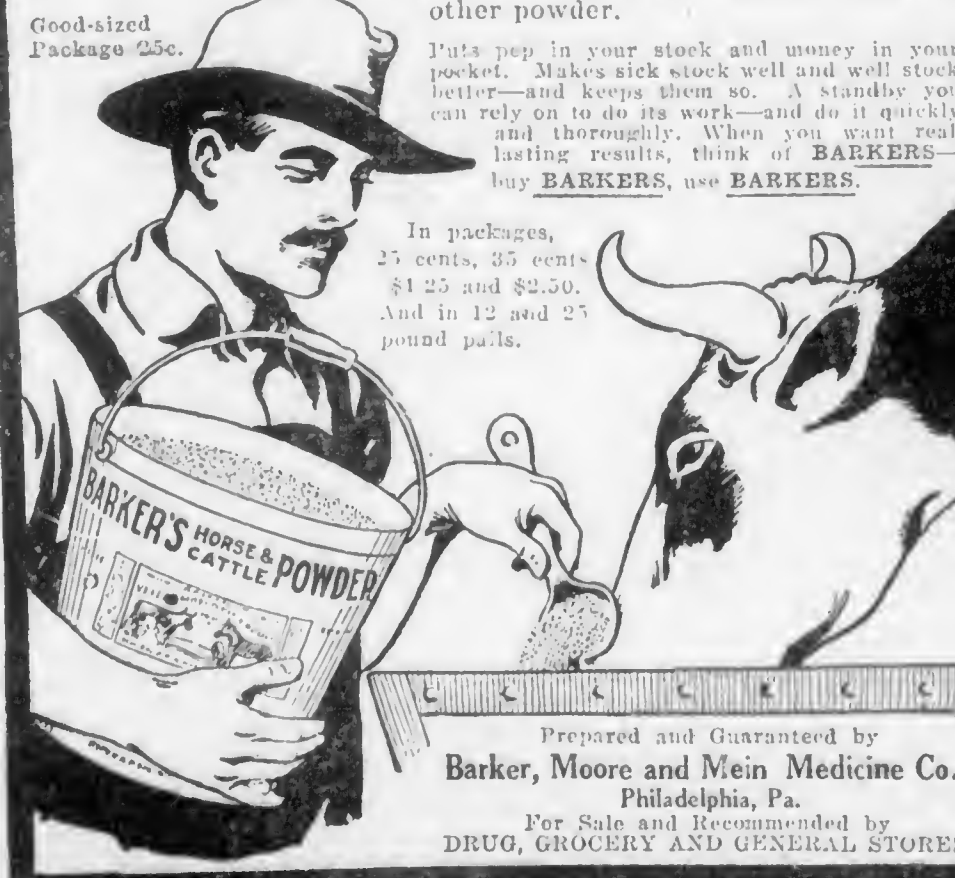
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YORK, PA.

PIPE second hand. Large stocks all sizes furnished with new threads and couplings.
PROMPT SHIPMENT
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CLOVER, CORN, OATS and GARDEN SEED
Save Money. Write us before you buy for our seed catalog, samples, and prices. A full line for the garden and field.
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The old reliable—60 years on the market—never scored a failure—never one complaint—yet millions of packages sold. Costs more than any other because it has high class, guaranteed drugs in it—uses 12 ingredients in its make up—and as only small doses are necessary it goes farther than any other powder.



Prepared and Guaranteed by
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For Sale and Recommended by
DRUG, GROCERY AND GENERAL STORES.

FEEDING FARM HORSES

The feeding of our farm horses is one phase of live stock production that is not given the consideration which it deserves. This is especially true of the horses that are kept idle a part of the time during the winter months. Too often they are compelled to hustle for themselves and as a result they are not in shape to withstand hard work when spring work opens. The annual cost of keeping a farm horse is another factor that is too often overlooked and the ration that has been used has not been worked out on a basis of economy and efficiency. On the other hand, the feeder of the horses is about as important a factor as the amount of food allowed and the combination that has been worked out. A good feeder watches the individual animals under his care. He knows when they are doing well or when they are off color and seem to lack the "spirit" which every lover of good horse flesh likes to see in his horses.

The horse is no exception to the rule of all farm animals, namely, that of requiring a certain amount of food nutrients to keep up the body weight and to provide the necessary energy for work.

These nutrients must be supplied in the proper proportion to furnish them most economically. The maintenance requirements which amount to fifty per cent of a full ration, must be supplied before there is anything available to be turned into work. Thus can be seen the importance of a well balanced as well as a ration with sufficient quantity to meet the needs of the horse. If the horse is not given enough to meet the needs of his body requirements and the amount necessary for the work which must be performed, the horse will lose in flesh and become thin.

The ration to feed the farm horse will depend to some extent on the feeds at hand and the type of work which the horse is performing. The feeds available for farm horses consist of three general types of groups; namely, roughage, concentrates and succulence. The amount to be fed of each of these feeds will depend upon the season of the year and the character of the work that is being performed. Horses that are idle or doing light work can as a rule secure more of their nutrients from roughage or bulky feed than horses that are performing hard work.

The two chief concentrates used for feeding farm horses are corn and oats. Bran and barley are also used to some extent depending upon the price at which these feeds can be secured. None of these feeds with the possible exception of oats, are satisfactory concentrates when fed alone. Oats alone very near meeting the protein and carbo-hydrate requirements of the horse and at the same time provide a considerable bulk which is not secured when corn is fed. When oats are scarce and high in price, it is possible to work out a very satisfactory ration in which other grains are used as a substitute for oats. When oats of good quality can be had in abundance and the price is reasonable, it is difficult to secure a concentrate that is relished to a greater extent by the horses, or can be fed with greater safety.

The addition of a small amount of oil meal not to exceed one pound per day, can often be fed to advantage, especially at this time of the year. The addition of this small amount of oil meal to the ration has a very

Puts Horses in Prime Condition

Most horses will work if they feed right. When you have to force them, something is wrong. No horse feels right when worked hard on warm spring days unless his heavy winter coat is clipped. Spring clipping is the best protection against colds, stiffness and more serious horse ailments. It pays big, and progressive farmers do it with a Stewart No. 1 Ball Bearing Clipping Machine. Price \$14 at your dealer's, or we ship direct on receipt of \$2 and you pay balance on arrival. Guaranteed to please or money back.

Bigger Wool Crop

The wool is an important part of your sheep profits. Get it all. Hand blade shearing leaves 15% of the wool crop on the sheep, besides an uneven fleece that won't bring best prices. This Stewart No. 9 Ball Bearing Machine shears quick and clean, leaves no ridges. Quickly pays for itself, even on a few sheep. \$22 at your dealer's, or buy direct from us, sending \$2 and paying balance on arrival. If your flock is large, write for Catalog No. 69 of power shearing machines. **Chicago Flexible Shaft Company** Dept. AB 149 5800 Roosevelt Road, Chicago



HE WORKS or YOU LOSE

SAVE-THÉ-HORSE will save you loss by curing, while he works, Ringbone, Thorough, SPAIN—on Shoulder, Knee, Ankle, Hoof or Tendon Disease—even the old, so-called incurable cases. Over 300,000 satisfied users and 27 years of success testify to its positive dependability. Sold only under our signed MONEY-BACK Guarantee to cure—we take the risk. Use it once and you'll always depend upon SAVE-THÉ-HORSE. Saves many laminitis cases in the last emergency. Write today for FREE sample of GUARANTEE and 96-page BOOK on how to locate, understand and treat all lameness also expert veterinary advice, all FREE. **TROY CHEMICAL CO., 270 State St., Binghamton, N.Y.** Druggists everywhere sell SAVE-THÉ-HORSE with Signed Guarantee, or we send it direct by Parcel Post Period.

Grow Hogs and Poultry on Buttermilk

Feeders are ever on the lookout for ways of growing better hogs and poultry, and growing them more quickly and economically. Experienced feeders will tell you that nothing has ever been found as better than good, rich buttermilk, but it has been almost impossible to get enough buttermilk to supply a regular part of the ration. This objection has been overcome and a process worked out for the concentrated production of buttermilk. Nutrients of successfully condensing buttermilk without products, called Semi-Solid Buttermilk, is shipped to hog and poultry growers all over the country, from factories located in different sections. It contains nothing water to Semi-Solid Buttermilk you get a real buttermilk which, being rich and easily absorbed, and which is a tonic and conditioner as well as a feed. Feeders of Pennsylvania Farmer interested in reducing feed costs and at the same time securing rapid growth and keeping their stock healthy, should get this product. For free sample and booklet containing valuable information about this buttermilk and feeding for profit, write J. H. Neiser & Co., No. 3 Chestnut St., Dept. 3512, Philadelphia, Pa. Consolidated Products Co., Dept. 3512, Philadelphia, Pa.

BICKMORE'S GALL CURE

ON COWS
Sore teats mean less milk. Rub ointment into teat and wipe away all excess with a cloth. Teats healed and softened over night. Excellent for caked udder, wire cuts, cracked hoofs, etc. Write to The Bickmore Co., Box 143, Old Town, Me.

GRELECK'S SEMI-SOLID BUTTERMILK

Best for hogs and poultry. None better. Fine for milk. For sale by S. W. BROWN, 33 S. Front St., Phila., Pa.

Heaves

Fleming's Tonic Heave Powder, good for "Heaves", rain, run-down, blue-bound horses. If they fall, postpaid, money back. If they fall, postpaid, money back. If they fall, postpaid, money back. **FLEMING BROTHERS, 253 Union Stock Yards, Chicago**

valuable physiological effect on the bowels and helps to restore condition to horses.

Corn makes a very acceptable substitute for oats in the ration. As a rule, it is economy to feed corn in addition to oats for the best interest of the horse as well as greater efficiency from the ration. When corn is fed it must be properly supplemented with a protein feed to balance the ration. Much of the feeling among farmers that corn is not a good horse feed is due to the fact that it cannot be fed alone with good results. The thought that prevails some places that corn cannot be fed to horses during the summer because it is "too heating" is on account of it being fed alone as the grain feed. Corn must be fed in combination with such feeds as oats and oil meal or cottonseed meal or bran and one of the protein supplements alone. A ration made up of nine parts of corn and one part of cottonseed meal makes a very satisfactory grain ration for work horses. Another combination that may be used in eighteen parts of corn, one part cottonseed meal and one part oil meal. When oats and corn are fed a satisfactory combination is one made up of six parts of corn, six parts of oats, and one part of the protein supplement. Bar corn is the best form in which to feed the corn as the horses seem to relish it more in this condition than any other form in which it can be fed. When ear corn is not available, shelled corn or coarse crushed or ground corn can be fed to advantage.

Bran can often be fed to advantage when used in small amounts in combination with other feeds. When used in a ration of corn, oats and a protein supplement, it should not form more than twenty per cent of the ration. Bran is used a great deal as an occasional feed as "bran mash." In places where horses are performing heavy work this combination is usually fed Saturday night. The bran should be moistened enough to make it flaky and a small amount of salt and ginger added.

Barley may take the same place that corn holds in a ration, but it should be crushed or rolled before it is fed.

The type of roughage to feed will depend upon the quality. The amount to feed will depend upon the kind of roughage and the work which the horses are performing. In city stables, the hay in greatest demand is timothy. This is due to the fact that it is usually free from dust and not too rich in protein and as a result can be fed without much danger of injurious effect from such feeding. On most farms, the common hay is mixed timothy and clover which makes a desirable hay if of good quality. Clover hay or alfalfa hay may be fed if of good quality and fed with judgement. When a legume hay is fed the grain allowance may be made up of feeds higher in carbo-hydrates than when timothy hay or mixed hay is fed. Horses that are not performing hard work can be supplied with a portion of their roughage in the form of good clean old straw or good clean corn stover.

Slilage of good quality, free from mold of any kind, can be fed to advantage, especially during the winter. It is desirable to limit the amount allowed to from ten to twenty pounds per day, depending upon the size of the horse. The amount of grain and roughage to allow daily will also depend on the size of the horse and the work to be performed.

A Word for The New International Manure Spreader

THIS year you will be planning with extra care. Extra acres and extra bushels must add their share to your profits. You will seek out new economies, and they must not be false ones. It is no year to be penny-wise and pound foolish.

In this connection you will be wise to build up your crop yields with an **International Roller-Bearing Manure Spreader**. Put good manure on your fields, finely, evenly, uniformly, economically, and the extra fertility will respond by paying for the International and leave it free for other years of crop building.

Note again these features in International construction: 1. Roller bearings at seven points. 2. Power delivered from both wheels. 3. Double ratchet drive with six feed speeds. 4. Short turn front axle; no pole whipping. 5. Rear wheels track with front wheels. 6. Tight bottom. 7. Two beaters and widespread spiral. 8. All-steel main frame.

The New International in its first year (1920) could not cope with the great demand for it. This year—place your order early, and rely on the constructive economy of the rolling-bearing International. See the spreader at the International Dealer's or write the Chicago address for information.

INTERNATIONAL HARVESTER COMPANY
CHICAGO OF AMERICA USA
92 Branch Houses and 15,000 Dealers in the United States

BIG TYPE BERKSHIRES

Outstanding sons and daughters of Matchless Rival 12th 24005, Grand Leader's Grandson 25100, Successor 25101, Rhoda's Herdmaster 25203. Also a few bred sows and open gilts for sale. An opportunity to procure exceptionally well bred stock at farmers' prices. Write us your names, we will try to please you. Verdaquest Farm, H. B. Longenecker, Lebanon, Pa. R-4.

Kinderhook Duroc-Jersey Ass'n.

Co-operation among 30 farmers. Breeders not dealers. Established 7 years. This is going to be a pork year; price of brood sows is astonishingly low. Now is the time to buy. We are overstocked. Write for description of the sows that you can buy for \$50 and up. There are some 40 of them farrowing after March 1st. Address: ROY McVAUGH, MGR., KINDERHOOK, N. Y.

SMITHSON HERD, LARGE TYPE BERKSHIRES. Twenty young sows, bred to farrow in March and April, by Symbol's Masterpiece, the Wonder Bear, and son of our American champion, Symboler Junior, 185 each. Splendid individuals. **Cryslar Spring Stock Farm, Scelyville, Pa.**

Poland Chinas Big Types, large prolific strains. Brooding orders for spring pigs. Registered and delivered, low prices. **C. W. Deedman, Freeport, Ohio**

Large Berkshire Swine Registered High Grade. Prices reasonable. Write **HOME FARM, Center Valley, Pa.**

HAMPSHIRE HOGS—Pigs 8 weeks to 6 months old. Registered from Satisfaction guaranteed. **ROY J. FREET, SHIPPENSBURG, PA.**

FOR SALE—O. I. C. SWINE of the big fancy type and very best blood lines. **HERSHEY, PA.**

BUY BIG BERKSHIRES—Reg. sows and gilts bred for spring. Choice Fall pigs. Prices right. **GROVE HILL FARM, HONESDALE, PA.**

CHESTER WHITES—Bred sows and gilts, service boars. Sept. pigs, either sex, or pairs not alike. Free. **Twin Brook Farm, Newville, Pa.**

MILKING SHORTHORNS—Bulls from 10 to 12 months old. Bull calves, also heifers. **C. M. KENNEDY & SONS, ULSTER, PA.**

TWO REGISTERED GUERNSEY BULLS READY FOR SERVICE. **J. M. NEILL, CANONSBURG, PA.**

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Or advanced big type breeding service boars, sows bred, fall pigs, sired by Fashion Giant and Ohio King, out of 700 and 800 lb. sows. Address: C. S. Dapley, Zanesville, Ohio, for descriptive price list and folder.

REGISTERED DUROCS—Fall pigs both sexes for sale. Also a few mature animals including a good bear. Good breeding. Write type. **Northumberland Co. Duroc-Jersey Breeders' Assn., J. M. Fry, Corresponding Sec'y, Sunbury, Pa.**

FOWLER'S PURE HAMPSHIRE BRED. Best and largest herd in East. **MACINNIS, PA.**

REG. DUROCS Prices reduced. Pigs sired by Joe, the \$16,000 boar. A son of Orion Cherry King. **JOHN W. COX & SON, New Wilmington, Pa.**

YEAR-OLD REG. JERSEY BULL—A good one. No. 1 of Oaklands blood. Price \$100. Will take a \$100 liberty bond for him. **W. F. McPARRAN, FURNISS, PA.**

REG. S. P. C. HOGS Fine gilts, service boars and pigs, 35% reduction. **H. C. Kyner, Shippensburg, Pa. R-4.**

CHESTER WHITES—Service boars, bred sows and pigs. Registered from Satisfaction guaranteed. **CLYDE HILL FARM, Kennett Square, Pa. R. D.**

REG. O. I. C. pigs all ages, selected stock, attractive prices. **BRUBAKER BROS., Star R., Cecilus, Pa.**

Hampshire Hogs—Fine bunch well marked pigs. April pigs; open pigs, bred gilts, young boars, etc. Free. **Star R., Cecilus, Pa.**

ROSECOYD FARM'S DUROCS OF QUALITY Pigs and Gilts for Sale. **HERSHEY, PA.**

REG. HOLSTEIN BULLS from the great Flanders Sir Valorous. Bred under State and Federal supervision. Inquire about them. **M. E. Baschior, Littlestown, Pa.**

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Bred sows for March farrow, young stock, any age. Also Guernsey cattle. Free circular. Local Lawn Farm, Bird-Land, Box 2, Lancaster Co., Pa.

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Bookings orders for gilts bred to Young Edge, first prize Senior Boar pig National Swine Show 1920. Stock all ages. **ROSS B. WITMER, Lampeter, Pa.**

BERKSHIRES—Longfellow and Masterhood breeders. Only the best sold for breeders. Satisfaction guaranteed. Lots of fine pigs on hand. Prices reasonable. **WARRIOCK FARM, A. L. Hostetter, Prop., Manheim, Pa., No. 1.**

Big Type Poland China Sept. pigs, priced east feeders, best of breeding to sell, big mallow for spring pigs. **C. E. SECHLER, Markleton, Pa.**

POLAND CHINA HOGS—Line bred Discher's Giants, big type, big boned and prolific. Winners at Philadelphia, Mercey, Stouffville and New Castle Fairs. **C. J. KLUNPH & SONS, New Wilmington, Pa. R-63.**

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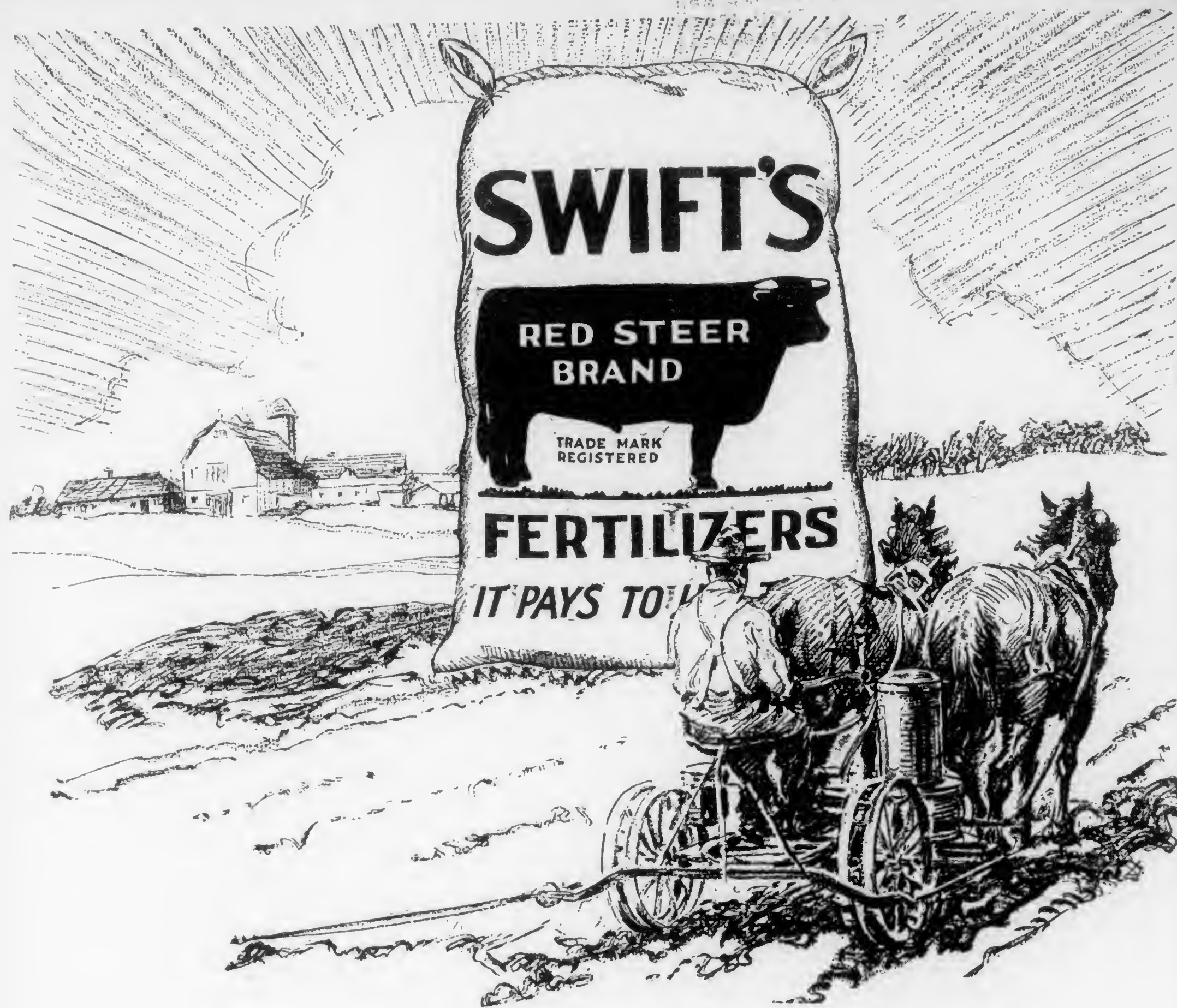
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PATHFINDER DUROC-JERSEYS—Some of America's best blood at farmers' prices. Registered and satisfaction guaranteed. **Falmora, Pa. R. No. 1**

PUREBRED BROWN SWISS CALVES, for sale. Come and see the goods. **G. E. BOWN, Forkville, Pa.**

AYRSHIRE BULL CALVES, Bred fully accredited. **ROBT. TEMPLETON & SON, ULSTER, PA.**



Your crop cost will be low

MAKE your land yield more pounds of grass or more bushels of corn per acre. Make the output per man greater. That is the way to grow your crops at low cost.

The certain way to insure large yields of best quality, which means low production cost, is to supply the crop with plenty of available plant food.

Swift's Red Steer Fertilizer will do this.

It is made from carefully selected materials, both organic and chemical, and furnishes available plant food from seeding to maturity.

Swift's Red Steer Fertilizer is evenly mixed and thoroughly cured. It supplies each plant with its proper proportion of plant food, thus insuring largest yields.

Liberal applications insure biggest crops of best quality.

For more than fifty years Swift & Company has maintained a reputation of making each Swift product the best of its kind. Three new factories were built by us last year to keep pace with the growing demand for Swift's Red Steer Fertilizer.

You can get Swift's Red Steer Fertilizers from the local Swift dealer or our nearest Sales Division. Don't delay—order and haul now.

Swift & Company, Dept. 13

(Fertilizer Works)

Baltimore, Md. Cleveland, Ohio

More per acre

Every acre must be made to yield its best to secure satisfactory profit.

It takes a certain number of bushels of corn or pounds of tobacco per acre to pay for the cost of production. All over this quantity is practically clear profit.

The average application of fertilizer per acre is larger each year because more and more farmers are learning that heavier applications pay them the biggest profit.

Your safest way to insure profits is to use a liberal application of Swift's Red Steer Fertilizers containing 14% or more of plant food.

"IT PAYS TO USE THEM"

PENNSYLVANIA FARMER

AGRICULTURE
THE KEYSTONE OF
NATIONAL PROSPERITY

ESTABLISHED 1880 PUBLISHED WEEKLY

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PHILADELPHIA, PA., SATURDAY, MARCH 12, 1921

75 Cents per year

Are You Using Your Home Market?

A Timely Discussion of an Opportunity Frequently Overlooked by Many Farmers

THE FARMERS and fruit growers of this country will long remember nineteen twenty as one of the most difficult selling years ever experienced. A year that in the beginning, apparently held every opportunity for good financial returns has turned into a nightmare. I believe that, in the spring of nineteen twenty, most people felt that there would be a splendid market for practically everything that could be produced.

With the war over and a world shortage of food, the only problem seemed to be one of production. Every factor that entered into the production of a pound of food was costing an abnormal price but the demand seemed to be so great that the question of over-production was never thought of. The result was that practically everyone planted as heavily as possible regardless of cost. Again, weather conditions during the first half of the year seemed to indicate that the shortage would be more acute than we even anticipated. Most growers will remember the early part of nineteen twenty as very unfavorable to crop production. The outlook was so black that late in the spring we had a regular wave of agitation urging increased production of all food products to meet the alarming shortage. Thousands of acres of vegetables of all kinds were planted late in the season by people who had no idea of planting when spring opened.

All at once everything seemed to change. The crops which looked so poor started to grow over night and kept on growing until very late in the fall. Instead of not having enough to eat, the problem was to dispose of the surplus. Thousands and thousands of tons of food were plowed under and left to rot in the fields and still there was no outlet for what was left.

On top of this over-production, we started to hear rumors of slack times. The consumers started to let up in buying. Foreign exchange went to pieces; Europe needed food (and still needs it) but had no money to buy. Conditions have gone from bad to worse until today our consuming public seems to be satisfied with practically everything that the farmers have produced. Theoretically, consumption should increase on all the cheapest food products but my experience has always been that the reverse is true. I have frequently noticed that as soon as any particular commodity becomes glutted, as soon as the markets fail to clean up from day to day, consumption drops off at once. The consumer seems to tire of that particular article and look for something else. This is especially true at the present

time. The cheapest commodities on the market today are apples, potatoes and cabbage and they are the things which are moving slower than anything else. These three things are abnormally low in price but they are not in demand. The receipts of these products have not been heavy during the last month but still the markets have been dull and have failed to clean up.

When the vegetable and summer fruit market had become completely demoralized, the apple men were getting ready to face the same disaster. Pennsylvania had one of the largest and most expensive crops ever produced. She used unusually high-priced labor, packed the apples in the most expensive packages ever bought, is storing them under advanced storage rates and, to cap

much will they have for their year's labor, but how much will they be compelled to lose on the nineteen twenty crop.

I do not believe in being a "calamity howler;" there isn't anything wrong with the country and as soon as everyone gets over the fear of falling prices, they will start to buy and then times will revert to normal. I really believe that if a small number of manufacturers had nerve enough to advance prices, we would see a change in short order. It doesn't benefit us to "cry over spilled milk" unless in the crying we learn not to spill it again—which brings us to the subject of this article, "Are you using your home markets?"

I have always been a firm believer in supplying the home market first. I have usually realized higher prices with less expense than I could have secured by shipping to the larger markets.

Of course, in some sections, there are no home markets but with the extended use of the truck and the telephone, there are very few growers in Pennsylvania who cannot reach a local market. I have tried all phases of home marketing—selling at the orchard, huckstering to the consumer and selling to the nearby retailers and commission men—all with very good results.

In the fruit business, selling direct from the orchard has wonderful possibilities and very few men in Pennsylvania have developed this method of marketing to its full extent. Furthermore, it is a phase of fruit marketing which is going to develop tremendously in the next few years. Any man, growing good fruit, can, with a little judicious advertising, develop a good retail trade in practically all fruits. There is a certain fascination for city people in buying their fruit direct from the orchard. I have seen them empty peaches on the floors of their machines and even put them in bags, as you would potatoes, simply because they wanted the fruit direct from the orchard, regardless of the condition it would be in when they reached home. The majority of this trade wants good fruit altho there is a certain class that prefers the cheaper grades and in that case it is a splendid way to dispose of all soft or over-ripe fruit. This retail trade takes up considerable time but is decidedly worth it.

To my mind, however, the greatest opportunities along this line are in the development of a truck trade.

Former Secretary of Agriculture Meredith Receiving a Testimonial of Appreciation from Scientists of the Department at a Farewell Reception



the climax, is shipping them at the highest freight rate in history to a market that is dead as far as apples are concerned. The result of these conditions is that the question facing most farmers and fruit growers today is not, how

it is not at all uncommon for dealers to send their trucks forty to fifty miles for good fruit. I think this is the most satisfactory method of disposing of all kinds of fruit. Here you can (Continued on Page 10).

Arguments in Favor of a State Fair

Leading Farmers and Stock Raisers Are All in Favor

THE following letter was sent out by the Secretary of the Pennsylvania Federation of Holstein-Friesian Clubs and shows the attitude taken by representatives of some of the leading livestock men of the state and reasons for their belief that a State Fair would be of great benefit to all agricultural interests in Pennsylvania:

Dear Sir:—The effort to establish a State Fair in Pennsylvania and thus place the livestock and agricultural interests of the state on an equal footing with similar interests in adjoining states, New York, New Jersey and Ohio has crystallized to a point that a bill has been introduced in the Legislature, creating a State Fair Commission to take preliminary steps for the establishment of a State Agricultural Fair.

This bill has the support of Governor William C. Sproul, Hon. Fred Rasmussen, Secretary of Agriculture, and the various allied agricultural associations in the state. At the annual meeting of the Pennsylvania Holstein-Friesian Association, of the Pennsylvania State Association of County Fairs, held at Harrisburg on January 27th, 1921, a resolution was passed favoring a State Fair and the officers of the various local clubs through the state requesting them to get in touch with the Senator and Representatives of their various districts asking them to support the measure when it comes up for consideration.

It has come to my attention that certain officers of the Pennsylvania State Association of County Fairs are opposed to the establishing of a State Fair on the grounds that it will absorb the interests now being taken in local fairs and have a tendency to lessen or cut off entirely their state appropriation for premiums. The assertion is made that in the State of New York, the State Fair has practically put the local fairs in that state out of existence. In answer to inquiries as to the conditions in the state of New York, I am pleased to submit the following letter signed by the Commissioner of Agriculture.

"I feel that the statement that a State Fair will put the local fairs out of existence, is not well taken and is not true in the case of New York State. I believe that the Genesee County Fair, at Batavia, had the largest attendance in its history last year. They have recently bought a tract of land adjacent to their grounds and are contemplating putting up new buildings to meet this increased attendance. I believe this has been true of most of our county fairs.

"The state appropriated \$250,000 for the county fairs in this state, which is supposed to reimburse them for premiums paid out. They paid out, however, last year something like \$75,000 in premiums above the amount appropriated by the state. The State Fair has not detracted from the interest in the county fairs but, on the other hand, has greatly added to the interests of the county exhibitions. Our junior project work, among the boys and girls of the different counties, carried on thru the Farm Bureau, coming together at the county fair and later at the State Fair, has done much to increase interest in both county and state exhibits.

"The advertising campaign put forward by a successful State Fair, by arousing interest and attracting attention helps to advertise all of the county fairs. The benefits from the premiums offered at the State Fair for encouragement in raising better crops and breeding better cattle, extend into every county helping greatly to encourage such exhibits at the county fairs.

"I am giving the above as a few of the reasons why I believe that the State Fair does not detract from the county fairs, but rather adds to their interest. As a matter of fact they become interdependent one upon the other. The county fairs act as feeders, we might say, for the State Fair and the State Fair becomes an advertiser for the improvement of rural conditions, better breeding, etc." (Signed) George F. Hogue, Commissioner of Agriculture.

The above letter sets forth very clearly what is being accomplished in New York State in an educational way by close co-operation of the local fairs with the State Fair. Pennsylvania's live stock and agricultural interests can never hope to be on an equal footing with the adjoining states until it takes advantage of the educational opportunities to be derived from well supported state and local fairs. We must have adequate appropriations to establish a State Fair, and additional funds to pay premiums at local fairs. Now is the time to get behind the movement. House Bill No. 452, File Folio 1837, creating a State Fair Commission was referred to the appropriation committee on February 9th, 1921, and may be reported out at any time.

I would ask that you be prompt to get in touch with the Senator and Representatives of your county and ask them to vote favorably on this bill.

Trusting that I may have your co-operation and prompt action in this matter, I remain, Respectfully yours,
(Signed) Howard C. Reynolds, Secretary.

That county fair officers are not all opposed to the establishment of a State Fair is shown by the following letters received from Mr. R. B. McDuff, County Agent of Lackawanna County, Pa., and from Mr. Norris G. Temple, Secretary of the Chester County Agricultural Association:

Dear Sir:—After having received letters both favoring and discouraging a State Fair the following resolution was adopted at a regular meeting of the directors of the Lackawanna County Fair. Resolved: That we go on record as favoring the formation of a State Fair and that we exert our effort to secure larger appropriations for County Fairs.

You have probably already received a letter from Secretary H. C. Reynolds, of the State Hol-

stein Association showing the status of the state and county fairs in New York State. We believe that Pennsylvania agriculture would further prosper if like steps were taken in this state, and we believe that those interested should see their legislators and ask for legislation to create a State Fair and to increase appropriations for county fairs.

Very truly yours,
(Signed) R. B. McDUFF.

The letter from Mr. Temple is as follows: My Dear Editor:—I was much pleased to read the editorial in your issue of last week commenting on the action of the State Association of County Fairs at their meeting in Philadelphia at Green's Hotel on the ninth.

This association has always stood for the good of county fairs in general, and largely thru its influence the various fairs of the state have received their state aid from year to year, and I believe if some of these county fairs had been conducted on the square, less trouble would be experienced from time to time in obtaining the appropriation. The set of resolutions adopted at the meeting on the 9th, was adopted but not unanimously; there were two and perhaps more who voted no. The county fair of which I am secretary had early in January of this year adopted a set of resolutions favoring a state fair, and directing that our Senator and Representatives be requested to use their influence to aid the passage of such a measure. We believe the time is at hand when the State of Pennsylvania should come out and set aside a sum of money to foster a state fair. This action should not in any way interfere with the annual appropriation to county fairs if they conduct their fair for the pro-

motion of agriculture and allied interests. I am your friend,
(Signed) NORRIS G. TEMPLE.

Mr. H. M. Knox writes as follows concerning the state and county fairs in New York: It has interested me to see the progress of the movement for a state fair for Pennsylvania as promulgated by Pennsylvania Farmer and your editorial of February 19th is of especial interest. I am a New York state man and my business takes me to the State Fair of our state and many county fairs. For the last decade I have been in attendance at our New York State Fair and so have had a chance to see the operations of the state and county fairs. It is as the "Farmer" says, if the Pennsylvania Fair Association had looked to New York state or Ohio they would never have opposed a state fair.

We consider in New York State that our State Fair at Syracuse is just a big parent to the smaller fairs. The success of the county and local fairs are in a measure as that of the State Fair. Our State Fair brings out the premier stock of land. The most modern agricultural machinery and equipment, the best products of the state, the most recent developments in the agricultural world are shown and demonstrated. In brief, it is a wonderful school—a school where you can spend a few days or a week and get in touch with the very best and most recent developments in the agricultural world.

Now, what bearing does this have on the local fairs? It only makes the interest keener in local fairs, I believe. Very few local fairs are held during the State Fair week so people can arrange to visit their State Fair and at the same time promote their local fair. Our State Fair was the best ever, last year, and I can say the same of the local fairs.—H. M. Knox.

SWAT THE RAT

The Public Health Service at Washington estimates that for every person in the United States there also exists at least one rat. Rats cause damage in the United States which amounts to the vast sum of \$200,000,000 annually.

A little figuring will reveal that, according to the above figures, it costs \$1.67 per annum to feed and shelter each rat and this is a very conservative estimate. Rats begin breeding at the age of about four months, have from six to ten young at a litter and will have several litters a year. Judge for yourself what the result will be if left undisturbed for a considerable length of time.

The rat is not only a destroyer of food and property but is also a carrier of disease germs and a menace to health. San Francisco spent approximately a million dollars to exterminate the rat in its fight against the plague.

To fight rats with any degree of success we must refuse to feed and harbor them. That is, we must have everything rat-proof as far as possible. Solid concrete floors and walls are a deterrent to the inroads of rats, but board or earth floors and open drains and sewers are just to their fancy. Ofttimes, owing to force of circumstance, the rats are already firmly entrenched and for various reasons we cannot rebuild or remodel; then the only recourse is to fight.

There are three chief methods of ridding a place of rats; poison, ferrets and traps. There are several rat poisons on the market besides such poisons as arsenic and strychnine. They all have the disadvantage of being dangerous to stock and children and must be handled very carefully. Ferrets are claimed by those who use them to be very efficacious. As to traps there are many different kinds but most prefer the old reliable steel trap. Use plenty of them and set them where rats are known to be.—H. A. C., Montgomery Co., Pa.



Tile Silo on Worth Brothers' Farm, Chester Co., Pa.

Soils and Fertilizers

Conducted by Dr. J. G. Lipman

Our readers are invited to send us their problems on soils and fertilizers and they will be answered by Dr. Lipman in this column.

SEED MIXTURE FOR SUMMER PASTURE

What would you advise as the best mixture of grains and grasses to sow early on last year's corn land, for summer pasture for cows for only one season. The soil is a good quality of sandy loam and I would like to have it for early June pasture. The land seems well adapted to sweet clover and I intend using a liberal quantity of it in a mixture.—C. C., Eastern Shore, Md.

C. C., Eastern Shore, Md.—A suitable mixture for your conditions would consist of:

Oats 1 bu. per acre
Spring vetch (vicia sativa) } " " "
Canada field peas 1 " " "
Red or alsike clover ... 3 pounds
Sweet clover. 10 " " "
Alfalfa 5 " " "

This mixture may be sown as soon as the land is properly fitted in the spring. Preparatory to seeding down, it would be desirable, if the field had not been limed for three or four years, to use either ground limestone or burned and slaked lime. The former may be employed at the rate of about two tons per acre. If the latter is used, the application should be equivalent to about one ton of freshly burned lime per acre. Previous to application it should be thoroughly slaked. After the lime is well worked into the soil, a fertilizer mixture consisting of 300 pounds of acid phosphate, 75 pounds of nitrate of soda and 25 pounds of muriate of potash may be used at the rate of 400 pounds per acre. This would be equivalent to the same quantity of a 3-12-3 fertilizer.

MORE DAYLIGHT SAVING OPINIONS

Mr. C. P. Kibbler, president of the Fruit Growers' Association of York County, speaking of daylight saving legislation and its effects on farming operations, recently said:

"The farmers are some of the most important men in existence. Cut off the food supply and humanity will soon be extinct; investigate any line of business, it either originates or terminates on or thru Mother Earth, cut off the farmer and the wheels of industry will cease.

"As to the origin of the proposed daylight saving law organization of New York city, accusing the farmer of not being willing to accept this proposed law from a selfish motive, there is a misconception as to the attitude of the farmer.

"I will venture to say the gentleman who made this assertion don't know the first letter of farming as the average bred city man does not realize or know what the farmer must endure, to supply the city man with the necessities of life. He does not realize that the farmer and his wife who live fifty and more miles away from the city are in the cow stable at four o'clock in the morning drawing the milk from the cows, and in many cases make a four or more mile drive thru the cold rain and mud to the railroad station in order that the city man can enjoy good fresh milk the

same day, while the city man in many cases is in bed on the broad of his back and will turn over and heave a sigh and say the farmer is selfish and not satisfied with present conditions. Many city folks propose to legislate to compel the farmer to get up in the morning at 2 and 3 o'clock.

"The daylight saving is detrimental to all branches of farming. The farmer's best time to hoard his crops is from 9 o'clock in the morning to 8 P. M. in the summer months, due to the fact the hay and grain as a rule are wet in the morning with dew and cannot be handled until dry. The only advantage obtained from the daylight saving is to the city man who will have more time for pleasure at the expense and disadvantage and inconvenience of the man who provides his daily bread. Unless the city folk and business people give the farmer more recognition some one will go hungry. Statistics show that there are

Don't Change the Clocks

Mr. Backus contends that the only reason the farmer has for opposing daylight saving is that he must meet early trains, whereas the farmer has numerous reasons.

A certain amount of sunshine is required to dry the dew on the vegetation before he can begin the most of his field operations; also the farmer has to put up with hired labor which is at times very exacting. On the other hand the daylight savers are narrow because they want to force conditions (which are unfavorable) on the farmer simply to further their own ends, in fact only to give them a longer evening for pleasure, which is alright as long as no one else suffers thru the change. They are childish because they want to change the clock thereby fooling themselves into thinking that six o'clock is seven. I have never heard of a farmer who opposed any one starting work an hour earlier. He only asks that they let the clock alone.—C. S. Backman, Bucks Co., Pa.

I do heartily agree with the article written by C. C. Hulsart on the proposed daylight saving law. Why should the city people have the power to tell country people when to start work? Many farmers are getting up at 4 o'clock in the morning to do their work and meet that train to the city with milk and other products.

Now they want to tell these farmers to get up at 3 o'clock in order to meet that train. We do not tell the city business men when to open and close their places of business. They can do as they please. It is not a matter of daylight saving, but one taking advantage of daylight.

Let the people who want daylight get up at 4 or even at 5 o'clock and start to work, then by working eight or ten hours they will have plenty of leisure.

The sun is up early, so let the people get up early, too. The farmers do not wish to make it inconvenient to every one in the city. Let city people use their daylight to best advantage and permit the farmers to do the same.

W. E. Backus of Pittsburgh in one of your recent issues, criticized farmers for being childish. What would the city people do if all farmers would be childish enough to miss all trains and send no products to the city?—A. H. Gerhart, Berks Co., Pa.

Work Fewer Hours

I have read and heard discussed as well as cursed, most everything concerning the daylight saving law and the main thing which the majority object to is, not getting another hour or two of work out of the hired help. Now I want to

say right now that I own a farm and work at farming as hard as anyone, but I still fail to see where the daylight saving law has hurt the farmer. Last year my man worked on the new time and when the whistle blew he quit for the day, leaving me to work the rest of the night if I cared to or was foolish enough to.

Now I did work a goodly number of hours after the whistle blew to pay the man and feed the other fellow who knew enough to quit and have a little time to himself.

At the end of the season this county had produced such a surplus of potatoes, cotton, wheat, corn, oats and milk, etc., and had allowed other

(Continued on Page 26).

Helps for Home Mixing of Fertilizers

Reprinted by request from Pennsylvania Farmer of April 3, 1920.

To furnish 1% of Nitrogen in one ton of Fertilizer Requires:

166 lbs.	Dried Blood, 12% N.	This am't also contains 15 lbs. phos. acid
250 "	Fish Scrap, 8 " N.	" " " " " " " " " " " "
222 "	Tankage, 9 " " " " " " " " " " " "	20 " " " "
270 "	Tankage, 7.4 " " " " " " " " " " " "	25 " " " "
345 "	Tankage, 5.8 " " " " " " " " " " " "	47 " " " "
345 "	Tankage, 5.8 " " " " " " " " " " " "	23.5 " " " "
285 "	C. S. Meal, 7.0 " " " " " " " " " " " "	8.5 " " " "
		and " " " " " " " " " " " "
95 "	Ammonium Sulphate 21 percent N.	
129 "	Nitrate of Soda 15.5 percent N.	
143 "	Nitrate of Potash (This am't also contains 63 lbs. potash).	

To furnish 1% of Phosphoric Acid in one ton of fertilizer requires:

75 lbs.	14—60 Bone	27.5% P.	This am't also contains .9 lbs. of N.
87 "	3—50 "	23.0 " " " " " " " " " " " "	2.1 " " " "
145 "	2—30 "	13.75 " " " " " " " " " " " "	2.4 " " " "
71 "	S. C. Phosphate Rock	28.00% P.	
62.5 "	Tenn. "	32.00 " "	
117.0 "	Basic Slag	17.00 " "	
143.0 "	Acid Phosphate	16.00 " "	
125.0 "	" "	14.00 " "	

To furnish 1% of Potash in one ton of fertilizer requires:

40 lbs.	Muriate of Potash 48% K.
43 "	Sulphate of potash 46 " " " " " " " " " " " "
166 "	Kainit 12 " " " " " " " " " " " "
45 "	Nitrate of Potash 44 " " " " " " " " " " " "

When a fertilizer company or manufacturer quotes a fertilizer formula as 4—8—2, he means that it contains four percent of ammonia, eight percent of phosphoric acid, and two percent of potash. On the other hand the experiment station worker means four percent of nitrogen, eight percent of phosphoric acid and two percent of potash. Ammonia and nitrogen are two different substances tho the former contains nitrogen. Either method may be followed if the difference is understood. In other words it must be remembered that there is only 1/2 of a pound of nitrogen in a pound of ammonia and the difference of 1/2 of a pound is hydrogen which has no value as a fertilizer.

In the same way phosphoric acid in ground bone is often quoted in terms of bone phosphate of lime. For instance a 3—50 pound bone contains 2.47 per cent of nitrogen and 22.9 percent of phosphoric acid.

The following table gives the figures by which one may be expressed in terms of the other.

To convert the guarantee of:	Multiply by:—
Ammonia into an equivalent of Nitrogen,	.8235
Nitrogen into an equivalent of Ammonia,	1.2140
Bone Phosphate, into an equivalent of Phosphoric Acid	0.4580

over four thousand farms idle in Pennsylvania. Your hear the daily remark that farmers are going to grow what they need, and let the rest look out for themselves. The farmer has been furnishing your daily bread for years, at a loss.

"The statistics are, the average and actual cost of the production of a bushel of wheat is \$2.15 per bushel, and sells today for \$1.50 and \$1.65 per bushel. With the exception of the last few years wheat was selling from 80c to \$1.50 per bushel. The wheat is grown at the expense of some other product of the farm. Were it not a necessity to grow wheat as a routine to obtain straw, hay and keep the farm in good condition no wheat would be grown from a financial view."



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OUR JOB is to serve our readers. Whenever you are puzzled, write to us and we will help you if we can.
—The Editors

I have come to believe that a blow struck a child is far wickeder than any wickedness a child can do.—William Dean Howells.

To Allow Gambling

WE HAVE had an intimation that a bill is to be introduced into the Pennsylvania Legislature to exempt county fairs and carnivals from the state anti-gambling law. It scarcely seems possible that any member of that body would risk his reputation, whatever it may be, even to introduce such a bill, to say nothing of urging its passage. While we have little fear that such a measure would be enacted if introduced, still the mere suggestion indicates the length to which the leaches on public body would go if they had a chance, and the extent to which the managers of some of the organizations named now permit or wink at the open violation of the anti-gambling laws indicates plainly what might be expected if given legal sanction. Are the so-called county agricultural fairs and the small-town money-making carnivals to be allowed to violate further the moral sentiments of their localities by legalizing immoral practices? We think not.

Starving Armenia

THE FARMERS of the country are called upon to respond to the Lenton Sacrifice Appeal which the Near East Relief organization is making in behalf of the still persecuted people of Bible lands. Resolutions of sympathy and of co-operation were adopted by the National Grange in its meeting at Boston, December, 1920, by the Farm Economic Association at its convention at Washington, D. C., on January first, by leaders of the National Board of Farm Organizations, American Farm Organizations, American Farm Bureau Federation, Farmers Educational and Co-operative Union of America, National Milk Producers' Federation and other national organizations as well as by many state and local farm organizations. All urge that local granges, farm bureaus and other organizations give this relief work hearty support and co-operation. Senator Arthur Capper, in accepting a chairmanship on the Committee for the Appeal, has already led the way.

At this season it is most fitting that every man and woman and child in our land of Peace and Plenty who calls himself Christian, should make some sacrifice, however small, for these stricken Armenians, over a million of whom have given their lives in loyalty to their Faith and two hundred thousand of whom are yet homeless and hungry, dependent entirely on American charity for their existence. Contributions may be

Pennsylvania Farmer

sent to the National Headquarters at 1 Madison Avenue, New York City, or to the state or local office.

Tariff Bill Vetoeed

AS WAS expected President Wilson vetoed the Fordney tariff bill which was passed by Congress for the ostensible purpose of "relieving" agriculture from severe losses during the period of deflation. From the first we have had little faith in the efficacy of the measure and still less faith in the intentions of some of the politicians who were backing it. While this particular tariff bill is dead, tariff revision in general will come up in the special session and farmers may then get a glimpse of the roon in the woodpile.

Because of the exaggerated importance which some farm leaders attached to the necessity for a special tariff bill we quote part of the reasons given by President Wilson in his veto message:

"This nation has been for very many years a large exporter of agricultural products. For nearly a generation before it entered the European war its exports exceeded its imports of agricultural commodities by from approximately \$200,000,000 to more than \$500,000,000. In recent years this excess has greatly increased and in 1919 reached the huge total of \$1,904,200,000.

"The excess of exports of staple products is especially marked. In 1913 the nation imported 733,481 bushels of wheat valued at \$70,931, and in 1920 35,848,648 bushels, worth \$75,398,834; while it exported in 1913 99,508,968 bushels, worth \$95,098,338, and in 1920 218,280,231 bushels, valued at \$56,957,769. In the year 1913 it imported 85,183 barrels of wheat flour, valued at \$347,877, and in 1920 800,788 barrels, valued at \$3,669,300; while it exported in the first year 12,278,206 barrels, valued at \$56,865,444, and in 1920 19,853,952 barrels, valued at \$24,472,448. In 1913 it imported \$3,888,604 worth of corn, and in 1920 \$9,257,377 worth, while its exports in the first year were valued at \$26,515,146, and in 1920 at \$26,453,681.

"The situation in which many of the farmers of the country find themselves cannot be remedied by a measure of this sort. This is doubtless generally understood. There is no short way out of existing conditions, and measures of this sort can only have the effect of deceiving the farmers and of raising false hopes among them. Actual relief can come only from the adoption of constructive measures of a broader scope, from the restoration of peace everywhere in the world, the resumption of normal industrial pursuits, the recovery particularly of Europe and the discovery of additional credit foundations on the basis of which her people may arrange to take from farmers and other producers of this nation a greater part of their surplus production."

"What the farmer now needs is not only a better system of domestic marketing and credit, but especially larger foreign markets for his surplus products. Clearly, measures of this sort will not conduce to an expansion of the foreign market. It is not a little singular that a measure which strikes a blow at our foreign trade should follow so closely upon the action of Congress disallowing the resumption of certain activities of the War Finance Corporation, especially at the urgent insistence of representatives of the farming interests who believed that its resumption would improve foreign marketing. Indeed, when one surveys recent activities in the foreign field, and measures enacted affecting the foreign trade, one cannot fail to be impressed with the fact that there is consistency only in their contradictions and inconsistencies. We have been vigorously building up a great merchant marine and providing for improvement of marketing in foreign countries by the passage of an export trade law and of measures for the promotion of banking agencies in foreign countries. Now it appears that we purpose to render these measures abortive in whole or in part."

It is an interesting coincidence that President Harding should have expressed somewhat similar sentiments on the tariff question in his inaugural address. He said:

"Today, as never before, when peoples are seeking trade restoration and expansion, we must adjust our tariffs to the new orders. We seek participation in the world's exchanges, because therein lies our way to widened influence and the triumphs of peace."

One of our reasons for questioning the expediency of the Fordney tariff measure was that it opened the way for charges that farmers favored special tariff legislation, the facts to the contrary notwithstanding. Farmers are not interested in the academic theories of either high or low tariff policies, but they are rightly interested in receiving the same consideration as is given other industries. They object to the principle which would throw food production into compe-

tition from which manufactured products are highly protected. Farmers have always opposed the establishment of special privileges by any kind of special legislation. With the Fordney bill vetoed they can now enter the coming tariff fight with free hands.

Our Washington Letter

Large delegations of representatives of the dairy and creamery industry from the leading butter producing states, were in attendance on the hearings before Internal Revenue Commissioner William M. Williams, relative to the proposed Treasury ruling on so-called adulterated butter. The ruling declares that all "butter made from decomposed or rancid cream, which has been neutralized with chemicals before churning, or from cream which is high in acid and has a bad odor, and which has been neutralized with chemicals before churning is adulterated butter, and is subject to a tax as such at the rate of ten cents per pound, under the act of 1902." The creamery butter manufacturers and dairy interests generally in the Middle West outside of Minnesota object to this ruling which unless withdrawn will become effective April 1. Appearing for their constituents several senators and congressmen from the Middle West made vigorous protests against the ruling, saying that it was their belief that the ruling would destroy the creamery, and dairy industry of several states, including Iowa, Nebraska, Kansas, Oklahoma, Colorado and the southern states.

The Muscle Shoals nitrate proposition, endorsed by the farmer organizations, and advocated by all of the recognized friends of the farmers in Congress, was the source of a bitter struggle between the Senate and House in the closing hours of the session. The Senate was determined that the \$10,000,000 appropriation for the dam at Muscle Shoals should go thru with the sundry civil bill. The House leaders were as strongly determined that this proposition should fail.

In considering agricultural legislation it is found that it is much less difficult to get favorable action in the Senate than in the House. This is due to the fact that the great agricultural west is more powerful in the Senate, while the Industrial East has a stronger representation in the House. New York state has forty-three congressmen; fourteen Western states have forty-three congressmen. New York outvotes Wyoming three congressmen. In the Senate, the advantage is with the West. These four Western states have twenty-eight senators to New York's two. New York, Pennsylvania, New Jersey and New England have 123 congressmen and eighteen senators, while the nineteen states west of the Mississippi River have 117 congressmen and thirty-eight senators. These figures indicate that the farmers might profitably devote more attention to the attitude of the congressmen they vote for to represent them in Washington.

The decision of the United States Supreme Court in upholding the Federal Farm Loan act and the validity of the exemption of bonds of the Federal Farm Loan banks and joint stock land banks from taxation, was very gratifying to the Washington representatives of the big farm organizations. The case had been pending in court for several months during which time the land bank system has been at a standstill.

Members of the Federal Farm Loan Board say that the decision clears away every legal question and removes every shadow of doubt as to the legality of the banks or their bonds. The announcement is made that there will be an immediate issue of farm loan bonds to finance the loans already approved by the board and held up pending the decision of the court.

Both the Federal land banks and the joint stock land banks are preparing to resume active business just as soon as the necessary arrangements can be made. Commissioner Charles E. Lobdell is quoted as saying that "it will be at least thirty days before funds are available for actual loaning."

It is believed that this decision will have a wholesome effect on the agricultural situation. Efforts will be made to secure amendments widening the scope of the Farm Loan act, making it more efficient in providing means of financing the farmers. It is well known however that the act has some influential enemies in Congress and that who if any attempt is made to revise the act will do their best to get thru some "jokers" that will wreck the entire system. It will require close watching on the part of the farm representatives and the farm press to save the Farm Loan act and the farm system from being wrecked. If the when Congress begins tinkering with it. If the farm loan system is wrecked, an advocate of the plan says it will not be because of any weakness in the Farm Loan act, and not because of any failures in the functioning of the farm loan system, but it will come because Congress and the general public have not been adequately informed as to the nature of the business in hand, much less as to details of procedure.—E. E. Reynolds.

HARRISBURG LETTER

Short Session After All.—Decision of the Legislature to adjourn finally on the last Tuesday of April illustrates how session after session of the Pennsylvania general assembly has been extended until midsummer simply because men in party authority were unable to make up their minds on just what should be passed. The present Legislature was elected in the midst of much discussion of a program and the preliminaries were made interesting by talk of "a short and business-like session" but when the organization came and there were mutterings of factional strife the plan to fix a definite date was put into the icebox. The Governor and his advisors could not see why a date should be set in January, but after Senator Boies Penrose put down his foot on some legislative projects and the administration cut loose its program everyone here went back to the original idea of "a short and business-like session" and concurred on April 28 for adjournment. The State will get a short session, the shortest one since 1909, but up-to-date has not been business-like and it will require considerable effort to get thru the routine matters of a session in eight weeks remaining from today. It will be more of a scramble for appropriations and a seeking for opportunities to slide thru other legislation. It seems to be certain there will be no new taxation measures to speak of and that various ambitious governmental plants will be trimmed or abandoned. It is to be noticed that the State Highway Department, which has been importuned by people all over the state to build roads, has been very careful to get its legislation in early and by the middle of next week it will be in the Governor's hands. Some other departments of the state government have not yet sent in their bills.

State Fair Involved.—Adoption of this policy by the state administration is regarded with some apprehension by advocates of a State Fair. The bill to establish such an enterprise has been prepared after consultation with a number of interested persons and while the amount has not been definitely fixed it will be ample to provide a site and buildings. The State Fair enterprise already has enough trouble without being involved in a wholesale cutting of new projects and retention of old ones. There are half a dozen cities contending for it and some towns have announced selection of sites, while the people interested in various county and other fairs have been sharpening up their scythes. A formidable lobby against the fair has been started and the friends of the bill will meet them.

Daylight Saving.—Legislators from the cities and larger towns, especially industrial centers, on the other hand, have been hard at work in the interest of daylight saving bills. There have been no hearings on the matter, but instead just a series of movements which indicate the bills have support in influential quarters. The bills being pushed are similar to the New York law.

Paying Cattle Claims.—The deficiency bill having enabled the State Department of Agriculture to provide the funds to meet cost of animals killed to prevent spread of disease or owing to tuberculosis the Bureau of Animal Industry has sent thru 256 claims, involving 1175 head of cattle. The state pays \$70 for thoroughbreds and \$40 for grade cattle. The vouchers have been made out and audited for weeks, the Bureau having been forced to mark time because of the fighting over the deficiency bill.—Hamilton, Harrisburg.

NEW YORK LETTER

Road Repairs.—Increases in auto license fees next year will be 15 per cent on pleasure cars, and very much more on heavy commercial trucks. The raise will mean about \$3 for a small car, \$9 for a big one and 25 to 30 per cent on heavy tonnage trucks. The aim of the new administration is to make license fees pay for state road upkeep and on this basis the fees must total an increase of \$2,500,000.

Farmers and Hunters Seek to Compromise.—A conference of representatives of these interests was called

in Albany this week. Sportsmen wish to eliminate all requiring of a written consent of owners of lands before hunters or fishermen can enter. Farmers may have to concede some of their demands which have been clear cut in an effort to reduce loss from sportsmen's activities. The latter thru their organizations are making vigorous protest of the Bettis bill which would protect the farmers.

Its Own Restored.—State control of the barge canal is about to be returned by the Federal government. So far the huge expensive waterway has been of little value to the country. From now on private corporations will be allowed to develop a service worthy of the great transportation medium, which is greatly needed.

Milk Plant to Close.—The Kohler Chocolate Company of Fulton will close thru April, due to surplus stocks. It will leave Fulton dairymen in very bad shape.

Garden Truck Exchange.—Syracuse and central New York vegetable growers are studying plans to develop a big, year-round garden truck exchange to sell produce at retail and on commission. The old market is outgrown and inconvenient. Sometimes 300 rigs are registered, and a big trade is assured from the start.

NEW JERSEY NEWS

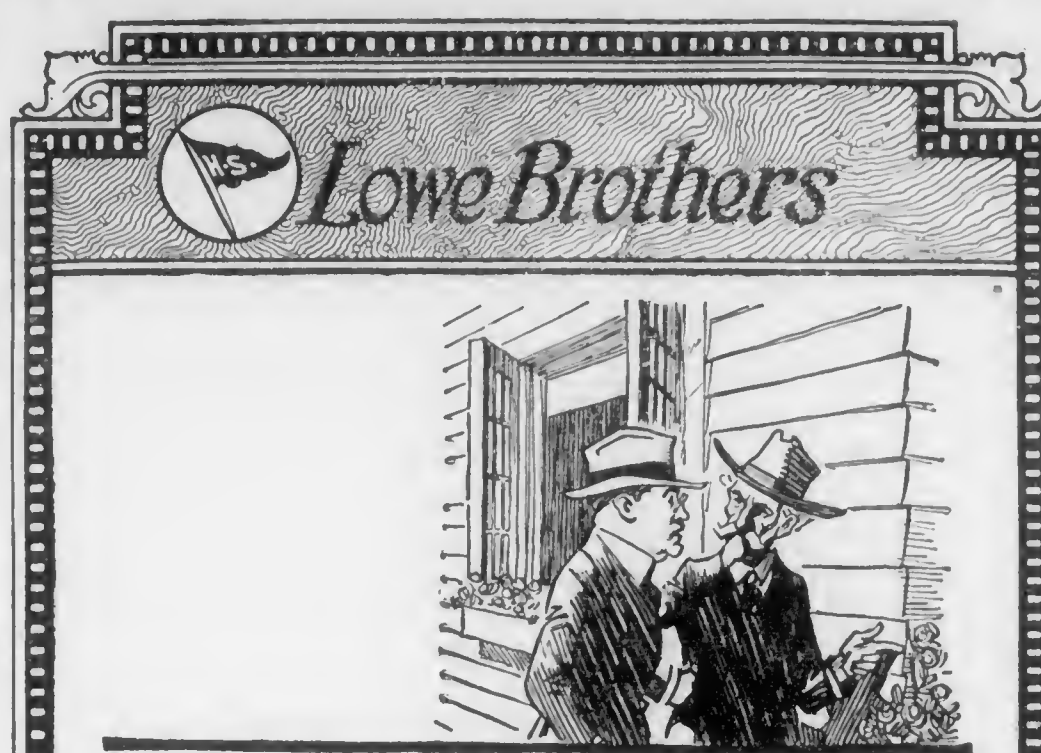
Daylight Saving Bill.—Owing to the fact that there are quite a number of members of the State Senate who hail from rural counties, it is indicated that the Eldridge Daylight Saving bill, which has passed the House after much opposition by the farmers' representatives, will be fought on the floor of the chamber of the Upper House soon. Agriculturalists of high standing in New Jersey have shown to the legislators that the measure will cause much hardship and loss to the farmers of the state. The measure, realizing the vital situation, will no doubt go slow in voting in favor of the bill.

Railroad Tax Increases.—The total increase in taxes that railroad companies operating in New Jersey will be compelled to pay for the present year in comparison to last year amounts to \$1,843,701. The final assessment of the property has been filed with State Comptroller Bugbee by the New Jersey Board of Taxes and Assessment, which shows a total increase in valuation of railroad property in the state over the 1920 assessment of \$17,950,507. As a result of appeals made to the board by the companies, there were total reductions in valuations of \$936,961. The assessment shows a total valuation of first and second class property for 1921 of \$390,229,488, while in 1920 it was \$372,248,981.

Cream Adulteration Bill.—Holstein breeders in New Jersey thru their state association are urging the passage of a bill in the present Legislature prohibiting the use of animal fats and vegetable oils as substitutes in the manufacture of ice cream. The measure calls for at least eight per cent of milk fats in the delicacy unless nuts, fruits or eggs are used, and then, there must be at least six per cent fat. It is said that ice cream is a very nutritious food because of the fact that it has always contained milk fat.

Breeders wish to protect their product from a few unscrupulous persons, who are charged with trying to use cocoanut oil as a substitute for cream, and it is hinted that thru amendments this has practically come about.

Farmers Talk Advertising.—Declaring that not only the workingman but every class in this country have a share in paying the taxes made necessary by the world war and explaining a number of important points in national and local taxation, Dr. H. W. Kemmerer, of Princeton University, delivered an enlightening address before the Mercer County Board of Agriculture at the annual meeting of the board here, W. S. Barnhart, Mercer County agricultural agent, stated in a talk that the raising of better and more crops to the acre and the possibilities of another farmers' market in the near future featured the activities of the organization of the farmers in Central New Jersey at the present time. Other topics discussed were the value of newspaper advertising and legislation.—Kelly, Trenton.



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And then He Proved It

By jimminy, if he didn't show me how it rubbed off white on his fingers. He told me at least three reasons why that paint, or any paint like it, wasn't worth a hoot. I'd like to tell you exactly what he said, but it's a bit too long a story to tell right now.

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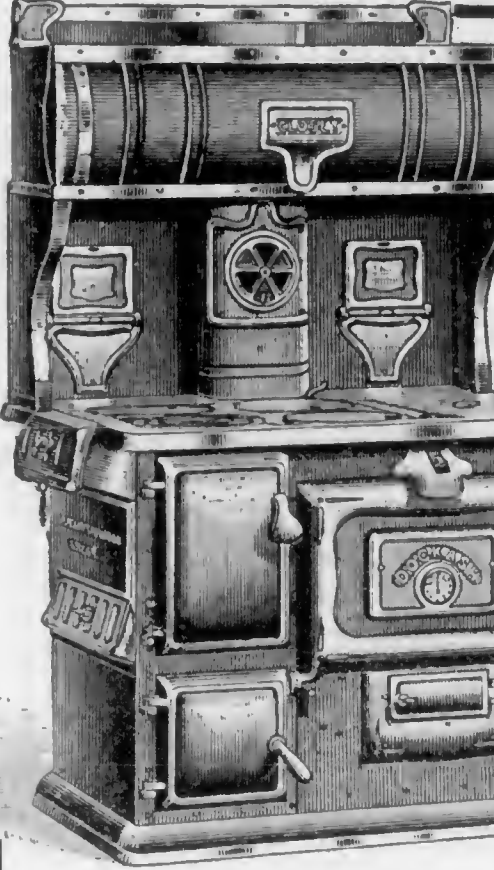
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No buckets, chutes or gears. Only ONE moving part. \$11.50 runs it. One man can move it. Lightest, simplest, best grain handler. Costs half as much as all other elevators. FREE BOOK, illustrated, explaining fully. Send name for copy—A card will do.

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No matter for what purpose, you will find in our line something to suit you.

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Giants in Strength

Craine 3-wall Silos

are as strong as they are handsome. And give ideal silage protection because of the triple-wall construction. Inner wall is closely fitted upright staves—an ordinary silo in itself. Your old stave silo can be used for this wall, saving expense.

Second wall is heavy Silafelt, to keep out rain, frost and air, safeguarding the silage.

Third wall is Crainelox spiral covering, winding up to the top. Protects and reinforces every inch of wall. No unsightly hoops or lugs to adjust and worry about.

The Craine Silo is a permanent building that pays rich interest every year on the investment. The strongest, handsomest silo made—and we can prove it. Write today for literature, free, and for agency terms.

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Rebuild the Old Stave Silo

Anytime made of stave silo, if covered, tipped or collapsed, can be rebuilt into a beautiful, new Craine 3-wall silo. Material cost only \$1.50 per sq. ft. of material except hoops. The hoops, sent for our plan of rebuilding old silos.



Breeding Up The Dairy Herd

IT IS doubtful if it pays to buy a purebred bull before one has a herd of cows that possess the characteristics needed to withstand heavy milk production. Increased production at the pail creates increased demands upon the animal's body, and unless the progeny of the purebred sire inherit the essential vigor along with the inherited tendency to produce more milk, they are sure to prove poor property. Breeding for increased milk production is a comparatively easy problem compared with maintaining the vigor necessary to accompany the enlarged productive capacity. Too many dairy farmers keep a herd of weak-looking cows in the hope that the heifer calves will inherit the necessary vigor from the sire. The upbuilding of a herd of efficient dairy cows depends upon the careful selection of cows with good constitutions quite as much as upon the use of improved blood.

In the first place we must have cows with great digestive capacity. What we call a big, wide muzzle and roomy body are indications of digestive capacity. Cows do not eat at first. They fill up, and then chewing the cud is eating. Animals that eat bulky foods have larger digestive tracts and by the law of correlated parts they should have large mouths. They must have much storage capacity. When the food has been chewed, then returned to the second stomach, and further digested, it must be taken into the blood; that demands a long digestive coil. A great storage capacity and a long digestive coil cannot be inclosed in a small body. That is plain enough.

Given a herd of grade cows that possess the essential vigor and great digestive capacity together with the ability to produce from 5000 to 6000 pounds of milk per cow per year, and a purebred sire from a line of dams and grand dams who have produced from 8000 to 10,000 pounds of milk per year, and it is comparatively easy for one to raise the average production of the herd up to from 6500 to 7000 pounds of milk per year. It is reasonable to expect that such a male of good productive ancestry would in a single generation put the owner in possession of a lot of uniform and vigorous heifers. The results from mating grade cows with a pure bred bull can be better ascertained by raising most of the strong and well developed heifer calves. It is not enough to raise the calves from only a few of the best cows. Larger numbers are needed to work with so that one can make better selections to retain in the herd for milk production and breeding purposes. A calf from some cow that is only an ordinary producer may turn out to be a better cow than the calf from some much better cow. The first generation of heifers will possess one-half of the blood of the purebred sire. If he is a vigorous animal it will be quite safe to breed him to his own daughters. In this way the first sire will put his owner in possession of a lot of uniform cows to form the basis of a profitable working dairy. The advantage thus gained should be

maintained by the use of other good sires.

When another bull is selected he should come from some family of similar breeding and from a line of heavy producing cows. With a herd of cows producing from 6500 to 7000 pounds of milk per cow it is difficult to increase the average and greater care must be used in selecting the new sire. When an average production of 8000 pounds of milk per year is reached further increase is slow and uncertain. A fact which illustrates the importance of selecting a better head for the herd that has already been brought up to the higher standard of production.

The herd that has been bred up to an annual production of more than 8000 pounds of milk per cow per year will quickly drop below such figures if the management is not right. It is not enough for a dairy farmer to bring his herd up to the goal of bumper production. He must hold them there once they have attained such a standard. He must study the pedigree of every sire purchased, note the production of his dam and dam of his sire. The two nearest female ancestors in the pedigree should be good producers, and there should be as many more good producers as possible. The bull is likely to reproduce his good qualities in his progeny according to the number of good females that are close up to him in his ancestry. That is to say, that some good ancestor several generations back is of little value unless the intermediate animals are good. It has been fully demonstrated that domestic animals get an average of 50 per cent of their inherited characteristics from the sire and dam. This gives 25 per cent from each parent. Going back one generation, it is found that the grandparents contribute half as much to the animal as the two parents. On this basis 25 per cent comes from the grandparents, as 6 1/2 per cent from each. Studying the pedigree of the prospective sire along these lines will give one a pretty good idea of the inherited dairy qualities from the milk producing standpoint.

Individuality is as important as pedigree in selecting a purebred sire. He should be a true representative of his breed and have a vigorous constitution. It is always safer to use a tried sire than to depend on a young bull and trust in luck. It is an unwise and dangerous policy to depend upon young and untried sires. Nothing can be told of the bull's breeding powers until some of his heifers come into production and it is regrettable that so many good bulls are sacrificed when their time of usefulness is just beginning, while so many young, immature animals, that ought to have been vealed, are allowed to sow their seeds of degradation in our herds. The sire that demonstrates his ability to get good calves, that develop into good cows, should only go when his power as a breeder is at an end.

The failure of many dairy farmers to succeed in the effort to grade up their herds is due principally to the fact that after seeing the great

improvements brought about by the first cross and attaining with the second cross much less improvement than with the first, they have abandoned all further attempts to grade up. The first cross of the purebred sire on account of his superiority over the cows with which he was mated showed far greater results. He exerted far more than one-half of the influence upon the progeny. While in the first cross there is existing a wide difference between the quality of the purebred sire and the quality of the grade dam, when it comes to the second cross the difference between the purebred sire and the half breed dam is much less and the cross of the three-quarter breeds will show smaller improvement. In this way many dairy farmers are apt to conclude that it is hardly worth while to pursue these lines of breeding any further, if they are not to attain sufficient results and right here is where they make the mistake of losing all of the improvement they have already made. The results are being attained and as rapidly as possible, but are less apparent from year to year. If the breeder stops the grading up process before the improved blood has become permanently fixed in his herd the revision to the original type becomes rapid indeed.

Cattle of mixed breeding cannot be depended upon to reproduce their equals. A man might select a herd of twelve cows of inferior or mixed breeding that would average up well with ordinary grades or purebred cows at a much less expense than a like herd of better bred animals, but it is right here that breed and breeding become of great importance to the dairy farmer. Such a herd of mixed breeding might be really profitable the first few years but as it becomes necessary to replace some of the older cows or those that are disposed of for many reasons, the cow of no particular ancestry back of her, gives no assurance that she will equal or excel her dam in productive ability. Here is where the dairy sire of well-known qualities and prepotency can be depended upon to give strength to the blood lines and help to bring about the desired results of improvement. When a farmer has a crop of half-breed calves, the appearance of these calves will very largely show the effect of the sire on their breeding, and of those kept for use in the dairy, one or two years' milking will determine whether they are valuable for breeding purposes and by breeding the half-breed heifers to a purebred male of superior quality a few crosses will place the owner in possession of a herd that for dairy purposes is nearly as good as the purebreds from which the first cross instituted.—W. Milton Kelly.

AYRSHIRE BREEDERS ORGANIZE

The Ayrshire Breeders of McKean County, Pa., on Feb. 14, 1921, organized the McKean County Ayrshire Breeders Association, their constitution and by-laws embodying such clauses as "to become a member one must place his herd under the state and Federal supervision for the eradication of tuberculosis" and "any member willfully misrepresenting a purebred, for the purpose of a sale, will upon sufficient evidence be expelled from the association." The number of reactors in the county have been .8 of 1%. This exceptionally low percentage, the ideal dairying section, the well-bred heifers and bulls, together with the enthusiasm shown will truly make history for Ayrshires in McKean Co.



17,602 Pounds Milk;
850.5 lbs. butter fat
in a year is the
record of this splendid
AYRSHIRE.
Healthy? Of course!

NOTE:—The trademark name has been changed from KOW-KARE to KOW-KARE—a name more expressive of both the PREVENTIVE and CURATIVE qualities of the remedy. There is not the slightest change in formula or manufacture.

You, too, can have record cows

Even though you may not have a single cow in your dairy that can ever hope to approach the mark of a champion, there are nevertheless many opportunities in almost every dairy for greatly increased milk production.

How? Simply by keeping an accurate record of every cow—and working to make each cow BEAT HER OWN RECORD. Milk records are great indicators of the ups and downs of a cow's physical condition. If the milk-making organs become sluggish, you'll soon learn—as others have—that a little prompt attention to health will return dollars for every penny spent.

For toning up and warding off the diseases that attack the organs of production, nothing has yet been found so promptly effective as the Kow-Kare treatment. At slight expense you can insure your cows against disease by its moderate use.

The medicinal properties of Kow-Kare act directly on the digestive and genital organs, making them function normally. Barrenness, Abortion, Retained Afterbirth, Scouring, Lost Appetite, Bunches can be prevented—or successfully treated—by following the simple Kow-Kare home treatment.

Convince yourself by testing Kow-Kare on one cow. Your feed dealer, general store or druggist sells it in 70c and \$1.40 packages.

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are guaranteed to please the purchaser. They are slipped subject to trial in the buyer's stable. They are right. Send for booklets.

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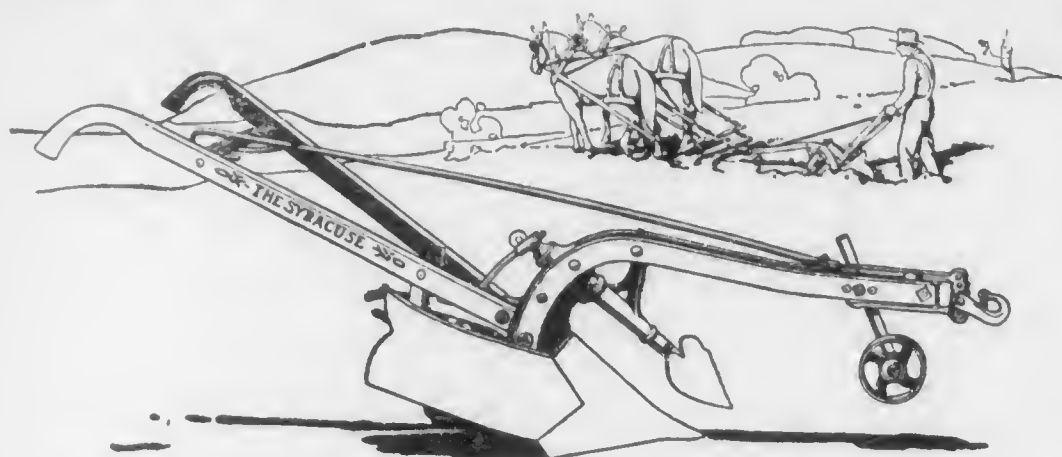
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General purpose plows for hard, dry or gravelly land; hillside

plows on which the bottom swivels, permitting you to turn your land all one way; plows with flat bottoms, specially adapted to sticky soil; these plows are made for you in the Syracuse line. They may be had in a variety of bottoms, such as full chilled or full steel, or a combination of both chilled and steel.

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BEANS STRAWBERRY, VEGETABLE & FLOWER PLANTS.
High quality. Low prices. Free price lists.
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HORTICULTURE

Horticultural Queries By J. P. STEWART

ONE of the signs of spring appears in the annual quickening of interest in fruit and vegetable problems. The following list of queries indicates that we are attaining "normalcy" in this respect at least.

Black Knot on Plums

I have a German Prune Plum tree which has the black knot which is often found on plum trees. Will you please tell me the cause of this disease and how to control it.—C. F. B., Cumberland Co., Pa.

This disease is caused by a fungus which goes by the sonorous title of *Plowrightia morbosa*. It attacks both the plum and cherry, in both wild and cultivated forms. It spreads from one form to another by means of tiny, microscopic spores. These spores are of two kinds, first, the summer spores, which are produced abundantly during the late spring and early summer; and second, the winter spores, which are discharged from special structures on the mature knots during the period from January to June, the exact time depending on the locality. The attacks may become so serious as to kill the whole tree.

The only satisfactory method of control is to seek out and destroy all evidence of the disease in the locality. This should be done before any of the new crop of spores are disseminated, which means that the best time to conduct the campaign is in the fall or early winter before January. Look over all the susceptible trees in the locality carefully, and prune out and burn all the knots found.

Altho it is now too late to get the maximum benefit from this course this year, yet even now it is the best course to follow, and it can be repeated next fall to catch any new infections that may appear. In a serious case, this course may well be supplemented by spraying with Bordeaux mixture (4-4-50), making the first application late in March, and repeating it three or four times at intervals of about three weeks, except on the Japanese varieties which are likely to be injured by this spray after they have come out in foliage.

Apple Varieties for Northwestern Pa.

I have a cherry orchard of Montmorency and Early Richmonds. Every other row was planted to peach trees. This last fall I pulled the peach trees out and would like to plant apple trees in their place. Could you recommend one or two good varieties for this section of Pennsylvania which if planted alone would not need to be cross pollinated. Our cherry orchard is of quite large size and I do not want to mix in a lot of different varieties of apples.—J. W. B., Erie Co., Pa.

According to our observations, the Rome Beauty has done at least as well in the locality concerned as any other apple. The Baldwin and Northern Spy have been planted fairly extensively there also, but the first is too susceptible to the "pit" disease which occurs thru the flesh; while the latter is too slow in coming into bearing, and is also rather susceptible to fungus troubles in the damp lake atmosphere. As another late apple for that locality, I would sug-

gest the Stayman Winesap, and for fall and early winter varieties, would suggest the Wealthy, and possibly the McIntosh if the spraying is well done.

Asparagus Growing and Fertilization
Would you please print in your valuable paper how to raise and fertilize asparagus.—R. H., Franklin Co., Pa.

The raising and fertilization of asparagus is a rather large order for the space at our disposal, especially if the inquirer expects to go into the business extensively. As a home-garden proposition, the requirements are not so exacting but the results will of course be better the more nearly right the work is done. The soil generally preferred for this plant is a deep, rich, moist, sandy loam, altho alluvial soils are also good. Other good soils may of course be used, but in any case stony soils should be avoided.

It is customary to start the asparagus plantation in a soil in which other vegetables were grown the year before, but some growers prefer a good clover sod. In either case, the soil should be thoroughly pulverized to the full depth of the plow furrow before planting. Disking thoroly, both before and after plowing, is one of the best ways of accomplishing this.

The bed is started with the so-called "crowns," which are fleshy-rooted plants, preferably one year old. These crowns can usually be purchased locally at a reasonable rate, but when this cannot be done, they can be developed from seed. The richest garden soil should be chosen for this, and the seed should be sown as early as possible in the spring, in rows at least 15 inches apart if they are to be worked with a wheel hoe, and at least thirty inches if to be worked with a horse. The seeds germinate so slowly that it is very common to sow radish seeds of an early variety in the same row, so that cultivation can be started as early as possible. The young plants are usually fertilized with a top-dressing of nitrate of soda applied either broadcast or along the rows, at the rate of 100 pounds to the acre and repeated at frequent intervals during the first season. This application should not be made so as to strike the plants when the young plants are moist, as it may cause burning under those conditions.

The plants should be set in rows about four feet apart and from two to three feet apart in the rows. They should be set at least six or eight inches below the general level of the soil, preferably in the bottoms of furrows, and be covered lightly with dirt until they show thru, the furrow being gradually filled up as the young plants grow tall enough to avoid being covered. Formerly trenches were dug to a depth of about two or three feet, into which large quantities of manure were placed before planting the crowns, but this has been found unnecessary and has been largely abandoned at least in this country. Subsoiling before planting has also been largely abandoned for the same reason. The crowns

should not be set so deep as to get below the good soil, but they should have considerable depth of course, in order to reduce danger of injury in early cultivation or in cutting the edible stalks.

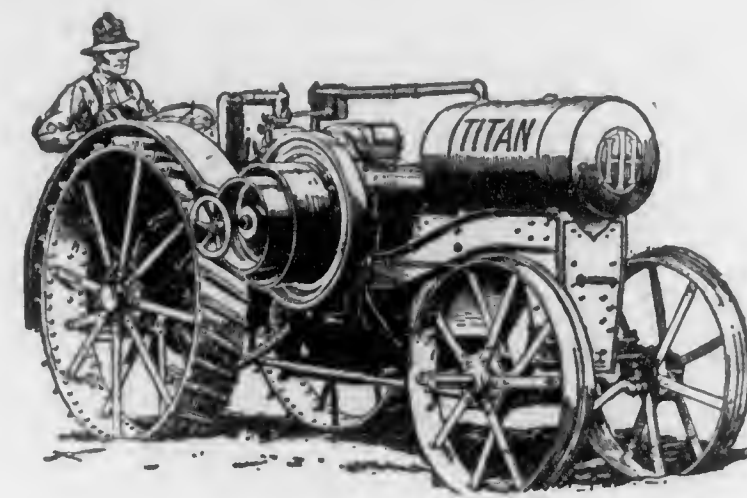
In the matter of fertilization, it is customary to give a new plantation very liberal feeding. Many growers use as much as 800 pounds per acre of a high-nitrogen fertilizer, such as a 6-8-5, soon after the plants are up, making the applications along the rows, and this is supplemented by top-dressings of nitrate of soda at the rate of around 100 pounds per acre at intervals of about three or four weeks thruout the first season. Well-rotted manure is also greatly prized the first year at least, when it can be obtained. A similar treatment is commonly followed the second year.

After cutting is started, a good fertilizer program is to apply about 800 to 1000 pounds per acre of a 6-8-3 mixture early in the spring before growth starts, and repeat immediately after the last cutting. At latter date also apply around ten tons of fine manure, if available, between the rows. This is commonly supplemented with about three applications of nitrate of soda of about 150 pounds each making the first as soon as growth starts in spring, the second about when cutting is half over, and the third about a month after cutting closes. Such fertilization is likely to be pretty expensive until the present readjustment in prices is completed, but a good asparagus bed will come as near paying dividends on heavy fertilization, under normal conditions, as any crop that we have.

TRIMMING CURRANT BUSHES

We have three thousand currant bushes which need trimming every season. If there is no heavy snow on the ground, the work can be done before spring. It is a lot of work and requires more time than we like to take. Therefore, we think we have developed time saving methods. In trimming we use the regular 8-inch California pruning shears. There are no set rules for doing the work. I take two of my best men with me and go at it. The first thing is to clip off nearly all the branches that lean out from the hills. All dead wood is removed. From six to a dozen old canes are left together with six to ten of the new growth. Everything else is cut out as close down as possible. The brush is laid in small piles between the rows so that it can be picked up quickly and carried out to be burned.

As the work progresses, I show the men how to remove the dark colored wood as it is the oldest. They are told that the two-year-old wood is the most productive; three-year-old wood is fairly productive while four-year-old stuff is worthless and one-year-old strong canes are a necessity. We usually spray our currants only once a year and that in the early summer to kill the currant leaf-eating worms. However this season there seems to be quite a general infestation of the scale. That means a dormant spray with concentrated lime sulphur. The mixture will be one part of concentrated lime sulphur with nine parts of water. We will drive along each side of the field with the power sprayer and spray with Pilot spray rods and long hose which is capable of withstanding a high pressure. The trimming and dormant spray will be completed as soon as possible so as to get that work out of the way.—R. W. De Baun.



Titan 10-20—for Economy Farming

DURING THE YEAR 1921
AND THE YEARS TO COME

TRACTORS come and tractors go but Titan 10-20 continues its steady traveling along the roads of popularity, and in the fields of labor, conquering the most difficult of practical farm tasks.

Theories and experiments in design and construction run their course among manufacturers and among farmers—and leave behind a varied history. But the service record of Titan has been a revelation in the agricultural world. Its record as an efficient farm power unit has been, to state a plain truth, convincing.

During its history, Titan sales have swept ahead; this tractor has carried its success into every county and country. Yet, except for minor improvements and betterments, Titan design has remained unchanged. It has stood the test of time, the test of hardest, roughest usage, the test of strenuous competition, so that to date the farming world has invested over seventy million dollars in Titans. Can there be better proof of thorough practicability?

Titan 10-20 is now more than ever standard because it is fundamentally simple, enduring, reliable, right. Do not be deluded by initial false economy. Increase the efficiency of your work for 1921 by an investment in this power. The International dealer is the man to see.

INTERNATIONAL HARVESTER COMPANY

CHICAGO OF AMERICA USA
(INCORPORATED)
92 Branch Houses and 15,000 Dealers in the United States



Fresh, Fragrant Roses

from your own garden

have a scent and beauty beyond all others. Under any sort of unfavorable conditions, you should get a surprising amount of bloom next Summer from our Group of
Five Fine Roses, \$1.50 Postpaid
Collins' Big 1921 Catalogue lists many such other nursery stock, vines, berries, plants, trees, etc. Worth writing for NOW.
Arthur J. Collins and Son
Box 55, Moorestown, N. J.



PEACH TREES

A full list of the very best varieties for market and home use.

APPLE TREES

A good selection of the standard varieties. Orchardists, raising stock should get our prices on "one-year-olds from bud" trees. They are the ideal tree to plant.

GRAPE VINES

All the best varieties, also such other small fruits, as strawberries, blackberries, raspberries, currants and gooseberries.

ROSES

Also other ornamentals.
Send for our catalog or mail your list of wants for quotations.
JOS. H. BLACK, SON & CO.,
HIGHTSTOWN, NEW JERSEY.

You Can Make Money Easily

I Will Send Every Reader of This Paper 50 Packets Schell's Quality Seeds

You sell them at 10 cents per packet, keep \$2, send back \$3, and ask for 50 packets more. I send the seeds postpaid and I trust you—send no money, just write and ask for a collection.

There is no limit to the number of these collections you can sell all spring and summer. This offer is to introduce Schell's Quality Seeds to everybody who has a garden. Send at once.
Schell's Seed House
They Grow Better Quality Seeds They Yield Better
DEPT. H. HARRISBURG, PENNA.

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have been reduced 15% on

Clark HARROWS

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IRON AGE



What Father Thought An Expense Son Makes An Investment

A MIDDLE WESTERN FARMER tills the same acreage that he, his brother and father used to farm. And he makes *more* money.

His father used the implements others throw away—unknown makes—for which repairs were hard to get or unobtainable. To him, farm implements were an expense—one to keep small. The son buys *known* tools—the best. He believes that implements to a great extent determine his profits—that implements are an *investment*.

This year farm profits will depend largely on production costs—hence on implements. Before investing, the careful farmer will ask: "Does

the tool mean better, faster work—is it dependable and durable?" Sixty-eight years' experience has served to answer these questions correctly in E-B line of farm tools. In these, your investment is protected. Every E-B tool is made to work when needed, to last many years, to lower production costs—facts attested to by farmers everywhere.

Close study of the farmer's needs has taught us *what* to make—sixty-eight years' experience has taught us *how* to make it.

Emerson-Brantingham Implement Co., Inc.

Established 1852 Rockford, Illinois
Pennsylvania Branch, Harrisburg, Pa.
A Complete Line of Farm Machinery Manufactured and Guaranteed by One Company

GOOD SEEDS

Grown From Select Stock—None Better—50 years selling seeds. Prices below all others. Buy and test. If not O.K. return and I will refund. Extra packets sent free in all orders I fill. Send address for Big Catalogue illustrated with over 700 pictures of vegetables and flowers of every variety.
R. H. SHUMWAY, Rockford, Ill.

Frost Proof

CABBAGE PLANTS

All leading varieties, 40 cents per 100; 300, \$1.00; 500, \$1.50; 1,000, \$2.50 postpaid. Express collect \$3.50 per 1,000. 10,000 for \$12.50 cash. Set them now for early heading. Satisfactory plants guaranteed.
Buy beans, early and late varieties. No. 1 stock. Prices on request.

J. P. COUNCIL COMPANY
Franklin Virginia

For Best Results Sow
QUAKER BRAND RED CLOVER,
ALSIKE and ALFALFA
Recleaned and Graded in Philadelphia
SOLD BY RESPONSIBLE DEALERS IN YOUR VICINITY

Are You Using Your Home Market?

(Continued From Page One).

make reasonably large sales with no extra handling, and know exactly what the price is going to be.

The huckster method is undoubtedly the most satisfactory of all methods for the small growers of fruit and vegetables. Here the grower gets the one hundred per cent dollar instead of the thirty-five per cent dollar of the shipper. If careful attention is paid to the handling of nothing but strictly first-class produce, which is displayed in an attractive manner, it is very easy to develop a big trade along this line. At least ninety per cent of the hucksters of today are using boxes, barrels, baskets and crates of all descriptions to display their produce, with the result that not more than half of it can be seen and this makes an unattractive appearance. I used this method of marketing largely for quite a number of years and found that appearance counted for more than fifty per cent in selling. The greatest objection to this method is the time required to sell a large quantity and it is out of the question for really large growers.

I have also tried marketing by parcel post and I think my experience

majority of my retailers for a number of years and have gotten to know their requirements so that I can frequently ship both fruit and vegetables for a couple of weeks at a time without bothering about orders.

We simply pack so many bushels of the different fruits and vegetables for each man, put on the price and ship two or three times a week as he may need it. In the rush season, I try to get in to see the dealers every week or two so as to see how things are moving and to collect the bills. The man who has never marketed direct to the retailer will possibly think it rather difficult to fix the prices without being on the market every day but I have never found any difficulty along that line. Here, however, you must be fair and I have always made it a rule that no dealer shall lose money on produce thru any fault of mine. In other words, if the market breaks on a certain commodity, and I am billing it too high, my dealer don't call me up and tell me stop shipping but simply sells at the market price, knowing full well that he is not going to lose money. This I believe, is very important and it is really surprising how few reductions must be made.

Again, be sure and take care of your regular trade. Frequently, certain dealers will pay an abnormally high price for something when it is scarce and next to nothing when it is plentiful. These are good men to let alone. I believe in supplying my regular men first at all times and give the surplus to the other fellow. The result is that we seldom have any surplus.

When your outlet is large enough and where it is possible to handle the marketing in this way, I think it is the ideal method. Your returns are always larger because you are saving on cartage and last but not least you can get back practically all of your carriers at a very small cost; this has been quite an item during the last several years.

The above method is quite advantageous to the retailer as well as to the grower. He knows just what to expect from week to week and can tell his customers when to look for the different fruits and vegetables in their prime.—Sheldon W. Funk.



Puff Ball Measuring 2 ft. 3 in. the Long Way and 6 ft. 6 in. in Circumference

has been about the same as that of others who have tried it. With the greater number of products, the cost is too high, not only the cost of mailing but the expense of packing in so many small packages. Then again, there is great damage in transit and the shipper is dealing with too many people whom he does not know.

In marketing vegetables and berries, I have found the most satisfactory method to be direct to the retailer. To my mind this method has advantages over any other used. The first requisite, of course, is a first-class article. It is necessary to get a certain reputation with the men who are handling your products. They must have confidence that your goods are going to come up to a certain standard and then it is very easy to sell large quantities of fruit and vegetables with very little soliciting. This method can be handled by a truck or by trolley freight. I have used it extensively and always with splendid satisfaction. Where trolley freight is available I find it to be a little cheaper than the truck and it also possesses several other advantages. I have been dealing with the

TOMATO GROWERS AND CANNERS MEET

At a meeting called by the State Federation of County Boards of Agriculture at Glassboro, N. J., February 19th, which was attended by 19 prominent tomato growers, members of the Tomato Committees of the county boards of agriculture in the tomato growing counties, and 16 canners, representing the large tomato canhouses in the state, the sentiment was expressed that the canhouse tomato situation was in very bad shape.

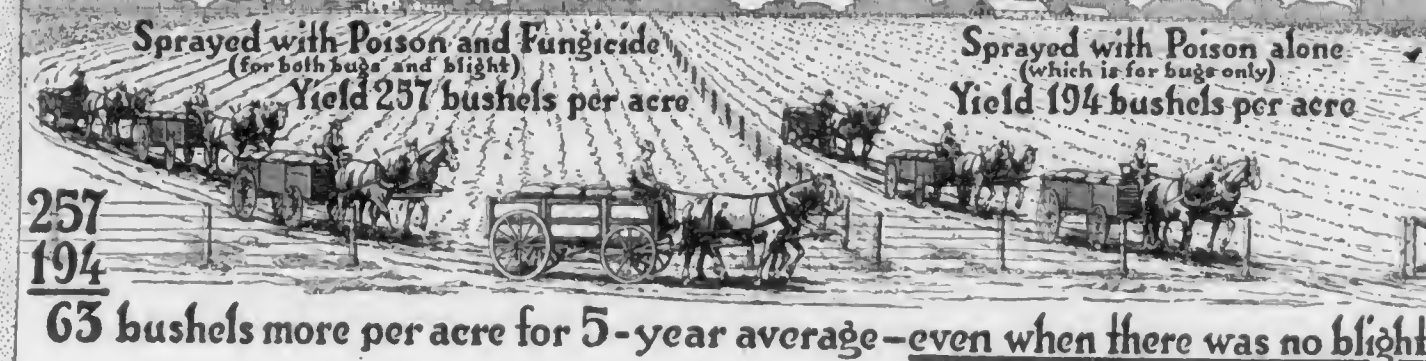
Many of the canners still have the major portion of their entire pack of last season on their hands. The price of canned goods is less than the cost of the pack to the canner. In some cases, if the tomatoes were given to the canners for nothing they would not much more than pay their cost at the prices of the market at the present time. The canners were unanimous in the expression of the bad year they have just had, and many will have to take heavy losses if the market for canned goods does not improve.

for fruits and vegetables

Use
Brox
on

Apples
Cherries
Currants
Gooseberries
Grapes
Pears
Plums
Quinces
Raspberries
Strawberries
Shrubs
Flowers

Four loads or three loads?



Adapted from bulletin No. 159 VI. Agr. Expt. Sta.

Use
Brox
on

Asparagus
Beans
Cabbages
Cantaloupes
Celery
Cucumbers
Egg Plants
Peppers
Potatoes
Squashes
Seed Corn
Tomatoes
Watermelons

"even when there is no fungus"

WHEN buying a spray material, consider that fungous diseases cause more damage than insects. Consider further that it pays to spray with a copper fungicide even when there is no fungus.

AT the Vermont Agricultural Experiment Station, the average increase for 20 years of spraying potatoes with a copper fungicide was 105 bushels per

acre. During five years of the twenty there was no blight. Yet for the five no-blight years the copper fungicide brought an average increase of 63 bushels per acre.

You need a poison insecticide to kill bugs and worms—a strong one.

You need a fungicide to control fungous diseases—a powerful one.

Pyrox Combines Both. Moreover, Pyrox foliage is a richer green; the plants are sturdier, stronger, more vigorous. This helps to increase the yield, even when there is no fungus! Remember that, when you choose your spray material. Select Pyrox because it is more than a strong poison; because it is more than a powerful fungicide; use it because it helps to produce a profit even when neither bugs nor disease prevail.

Pyrox is easy to use—just mix with water, and spray. It is so creamy, smooth and fine it does not clog the finest spray nozzle. It sticks like paint, stays on for weeks in spite of rain. Convenient size packages for every need.

Remember—Pyrox is a preventive, not a cure. Therefore buy it early and spray early. See the dealer and reserve your Pyrox. Write for new illustrated Pyrox Book which tells how to spray fruits and vegetables for profit.

BOWKER INSECTICIDE COMPANY

43-D Chatham Street, Boston, Mass.

1005 Fidelity Building, Baltimore, Md.

715 Conway Building, Chicago, Ill.

Pyrox

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TRADE MARK REGISTERED



Ready for All-Around Work On Any Size Farm

Study the work of this little tractor. See whether it does not give you the logical, practical answer to the power problem on your farm. We sincerely believe it to be the biggest success ever offered in a small tractor.

Here's dependable power in small size—quality construction at low cost—a complete power plant that can put speed and economy into practically any kind of farm work. It can be used profitably on any size farm. Besides plowing you can hitch it to your disc, harrow, grain drill, mower, blower, manure spreader or other machines and finish your work in much less time and at lower cost than with animal power. Also runs a small thresher, silo filler and other belt machinery.

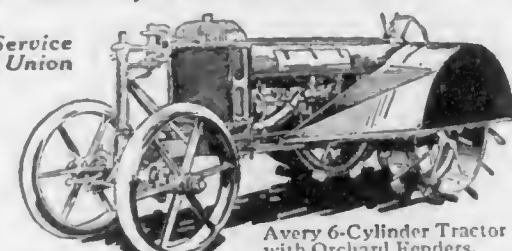
One owner says: "We have never required the service of any of our service men and the little tractor has done everything for us. We are pulling what we consider a good six-horse load and seem to have plenty of reserve power."

It is built complete in the Avery factories. Has

AVERY COMPANY, 84 Iowa Street, PEORIA, ILLINOIS

Branch Houses, Distributors and Service Stations covering every State in the Union

AVERY
Tractors, Trucks, Motor Cultivators, Threshers, Plows, etc.



Avery Motor Cultivator with Orchard Fenders.

FENCE POSTS FOR SALE

Made from High Carbon STEEL Angle. Are to be driven. Saves labor and expense of digging post holes.

Guaranteed for 20 Years

Have sold STEEL fence posts for twenty years. Price list FREE

J. H. DOWNS, 38 Roosevelt Avenue, JERSEY CITY, N. J.

Lightning Rods EXCLUSIVE AGENCY AND AGENTS. SELLING "DODGIES"—UNIVERSAL RODS. Our copper rods come in the WHITE and BLACK. PRICES ARE RIGHT. L. L. DODDIE CO., MARSHFIELD, WIS.

FARMS

MICHIGAN

Seed Potato & Stock Farm

Dorr D. Babel Estate, Elmira, Mich., offers for sale, Maplewood, the famous seed potato farm of 200 acres on two state highways. Just outside good market town. Also 40-acre out-lying pasture lot and two half sections new land, partly improved. Excellent stock farm. Modern farm house, running water, furnace, etc. Large barn, two silos, granary, tool house, shop, hen house, garage. **GLEE WICKETT, Adm'r., Elmira, Mich.**

\$600 Secures 145 Acres With Cows, Poultry and

Machine tools, hay, etc., thrown in; convenient town, excellent; machine-worked fields; spring-watered pasture; wood, timber and 1400 in more than pay for farm; 1200 near water; 6-room house, stock barn, poultry house; to settle now \$1200 plus all, fair down. Price 18. Street. See Catalog 1100. Inquiries, just out FREE. STOUT AGENCY, 1422 B. East 10th Bldg., Philadelphia, Pa.

FARM BARGAIN

12-acre farm, sandy loam, clay bottom, cool soil to raise any kind of crops. Large house with 10 rooms, good water, large barn, rural lined granary, silo. Will sell with or without stock and machinery. See ad. See Route 10, down east of 2300. Edward Reese, 1956 Gratiot Ave., Detroit, Mich.

FARM CATALOG JUST OUT

Farms described and illustrated around Philadelphia. Write at once for free copy. Reese & Linderman, 6 E. J. Airy St., Norristown, Pa.

FARMS AND HOMES in Delaware where the climate is pleasant, the lands productive and prices reasonable. For information write State Board of Agriculture, Dover, Delaware

61 ACRE FARM for sale, near Princeton, N. J. 1000 ft. to Liberty Highway. Good buildings, well adapted for dairies and poultry. **LINCOLN G. BACKUS, Kingston, N. J.**



POULTRY

GETTING RESULTS FROM THE INCUBATOR

Each spring as the hatching season comes near I try to sum up the successes and failures of the past years, and endeavor to see where I failed and the reasons for my success. In early years of artificial incubation I recall that many of the failures were due to faulty construction of the incubators. It is a far cry from those days, back in the early 90's, to the modern incubators that hatch by the thousands. Then an oil-heated incubator with a capacity of 250 eggs was looked upon as a mammoth machine.

The incubators capable of hatching out from 80 to 95 per cent of the fertile eggs are as numerous now as the automobiles that can give the owners 16 miles to a gallon of gasoline. Of course, these figures are the ones given out by the makers. In my own experience—going back over a number of years—I can recall that the hatches over 80 per cent were scarce as compared with those under eighty.

I have become convinced that a large hatch is not always to be desired. Frequently, I have had hatches that would have done credit to any make of machine, but the seasons of high hatches were not always the most successful from a financial standpoint. For my part I would prefer to hatch out from 60 to 70 per cent of good, strong chicks than from 80 to 90 per cent that start out in life handicapped with weak constitutions and the numerous ills that beset young chicks. I have come to the conclusion that it is not how many chicks one hatches out early in the season as the number one can "shoo" into winter quarters as pullets in the early fall.

There are many types of artificial incubators on the market today—large and small, hot air and hot water, with single and multiple compartments. If they are operated according to directions which are sent out with the machine, practically any one of them will prove satisfactory. Many poultrymen, particularly beginners, try to improve upon or ignore the directions and they fail as a result.

A chick that comes out of the shell on time, with lots of life, that duffs up in a few hours and gets on its feet and takes an active interest in things around him is the only kind worth bothering with. The weakling among the baby chicks will not pay for coddling and will not earn money for the owner.

A strong chick will never hatch out of a poor egg. The breeding stock that produced the eggs must be strong, carefully selected for vigor and constitutional strength and be well mated. A weak male will never produce good chicks. A few dollars spent for a strong male bird will have a lasting effect upon the chicks for that season. There is still plenty of time to add a good male bird to your flock before the hatching season begins on most farms in this section.

Care of the hatching eggs is necessary. I have known hens to do their work properly, and yet the poultryman was to blame for a poor hatch. I make it a rule to gather the eggs

regularly and often, particularly in cold weather. I never allow hatching eggs to become chilled. It is essential to keep all nests clean, for a dirty, fouled egg will result in a poor hatch. Fresh eggs hatch best. I never hold an egg over two weeks, and very seldom that long. The eggs for hatching are carefully selected, for it does not pay to waste time and oil on a lot of freak eggs simply because they are gathered from the breeding pens. As a rule, a good, large egg will produce a good, large chick, while an undersize egg will result in a small chick. I carefully avoid the extra long or narrow eggs.

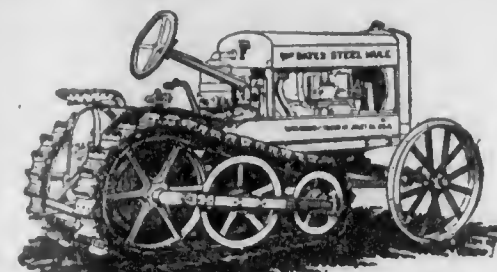
After the incubator is filled with good-sized eggs I follow the instructions of that particular make, always bearing in mind that conditions vary in various parts of the country. The moisture supply is an important part of operating an incubator. Some machines have moisture trays, and these should be used according to the directions. Moisture keeps down evaporation from the eggs and keeps the shell in good shape. The air in the incubator cellar or hatching room should be kept moist at all times. I have had good results from sprinkling the eggs every morning after cooling and just before returning them to the incubator. Use warm water and be sure to wet the eggs well. This can be continued until the machine is closed for the last time. Be sure to chill carefully and never take a weak chick out of the incubator.—A. J. Bradley.

ARTIFICIAL LIGHTING FOR LAYING HOUSES

I have read quite a bit in your notes on poultry about artificial light for laying hens. We began the experiment in January, 1921, sometime between the first and 15th. The results have been very satisfactory up to the present time. When we began we were getting from 25 to 30 eggs a day, now we are averaging over five dozen a day and yesterday and today got 69 each day. We only have 90 pullets of the Barred Rock strain. Can any of your readers beat this record. Since Feb. first to the present date (Feb. 24) we have gotten 1420 eggs from the 90 pullets and I think we have had from one to three up to change their minds about setting all the time. We think we are consistent with the hard times as we are selling the eggs at \$1 for 15 eggs for setting.—S. E. H., Dorchester Co., Md.

GOOD LAYERS

In your issue of Jan. 29 you give a report for December of a number of test flocks of pullets under illumination and without illumination and I note the best average per pullet is 13.1. I was rather astonished at this low average compared to what my pullets have been doing, and I feel there must be some conditions not right. I hang a barn lantern in my coop at 5 A. M. and keep an accurate daily record of the number of eggs so will give you the totals and averages per pullet for the month of December and January which were: December 1441 eggs, average 201; Jan., 1223; average, 221.—M. C. R., Armstrong Co., Pa.



The most efficient Tractor in America

Making Bigger Crops with the Bates Steel Mule

THE ability of the Bates Steel Mule to do fast and sure field work in the Springtime increases the crop from ten to thirty percent.

The Bates Steel Mule is built for Spring work, and every farmer who uses horses or less efficient tractors for this work pays for a Bates Steel Mule whether he buys one or not. The sure-footed traction of the Bates Steel Mule allows double disking and harrowing to be done in one quick operation.

The Bates Steel Mule does not pack the ground because of the broad Crawley surface which allows the tractor to rest on the top of the soil as lightly as a child's foot. The heavy duty Bates-Midwest engine is an absolute guarantee of dependable power and the rugged construction will stand the hardest service. Regardless of soil conditions the broad Crawley surface prevents slippage or miring down.

Bates Crawley Shoes have hardened steel parts, and are 100% oversize—that's why they last for years.

The front wheels make easy steering and comfortable riding. The increased knowledge of how much money Bates Steel Mules make for farmers each Spring, combined with the fact that the price of the Bates Steel Mule has been reduced to practically a pre-war basis has caused the demand for this machine to be greater than ever this Spring.

Write today for full information.

Bates Machine & Tractor Co.
Dept. 2-N Established 1883 JOLIET, ILL.
JOHNSON & HOPKINS Trexlerstown, Pa.



CROWN GRAIN DRILLS

Take advantage of the large price reduction in the CROWN Line of Grain Drills and Line Sowers. We are giving the farmers every advantage in the cost of our line for the Spring Sowing.

New Needham Crown Drills are equipped with the Improved Mural fertilizer feed. This feed with the famous Crown Grain Drill will make the New Drill the best in the world today.

Crown Mfg. Co.
30 Wayne St.
PHILADELPHIA, NEW YORK



The BUCKEYE Tongue Support

for binders, mowers, disc harrows, manure spreaders and corn harvesters. Agents wanted in every county in the U. S., except where represented. Write for circulars and testimonials and wholesale prices. The Milford Mfg. Co., Mansfield, O.

Seed Potatoes

Early Irish children, grown on new ground, thoroughly treated and sprayed. Nice clean seed. Price \$1.00 per 100 lbs. in sacks.

E. C. SNOVER, Covington, Pa.

MANURE

HIGH-GRADE NEW YORK STABLE MANURE. Carefully selected and screened. No foreign matter. Philadelphia and Reading Railroads.

Acme Stable Manure Co.
PHILADELPHIA OFFICE, 1918 MARKET STREET

COUNTY NOTES

Forest County, Pa.—Had very moderate winter weather the first three weeks of February, the last week was a white one and some very cold nights, but not very good sleighing. Ice crop has been poor so far. Farmers are getting in their season's supply of seeds, fertilizer and lime and are planning for the summer work. Live stock is looking good, some registered cattle is being offered for sale in the county. On Feb. 4th at West Hickory, a Duroc-Jersey Breeders' Association was organized which shall be known as "Harmony Duroc-Jersey Community Breeders' Association," orders have already been placed for eleven sows and one sire. On February 18th County Agent W. Irwin Galt, met with a number of farmers in Forest Grange Hall to discuss dairy prospects in that vicinity with especial reference to purebred cows, and a purebred community-owned bull. The sentiment of those present were to take some quick action toward better stock and they decided to hold another meeting early in March to which everyone would be invited. A winter wheat test is being conducted by the Farm Bureau, on the A. R. Hillard farm, in Barnett Township. Grain prices are about the same as last month: Potatoes, 75c; \$1; apples, \$1 bu.; dressed beef, 13c to 16c lb.; pork, 15c lb.; butter, 50c; eggs, 30c. Not much demand for cows and horses, except real good ones.—C. E. M.

Frederick Co., Md.—Weather unusually mild early part of February, farmers in this section doing much of their spring plowing and hauling manure. Sunday, the 20th, witnessed the first real winter of the season, about 12 inches of snow falling. This was a great help to grass and grain but promises to be going soon as it is considerably warmer. Prices of farm products continue to decline, some feeders selling steers as low as 7c a lb. Hay has no sale at all, local dealers refusing to buy.—R. J. W.

Washington Co., Pa.—Weather has been quite changeable for some time, cold and stormy one day then perhaps warm and wet the next. More snow and real winter in last three weeks than any time yet. Wheat looks slightly better. Clover seed market caused some surprise. Early buyers lost money owing to unusual drop in price.

Farmers hauling feed and manure. Too much feed and to little manure in many cases. Roads in bad shape altho scraping helped some. Very little plowing done yet. Labor prices slowly coming down. Most coal operations shut down but some mines running 3 to 4 days a week. There is little demand for coal. Not much sickness except children's diseases. Looks like the "flu" would miss this year, but never can tell. Many farm sales for March. Farmers restless and some discouraged with conditions. Prices range as follows, veal calves, \$10 to \$13.50; hogs lower, around \$8 to \$9; sheep active, about \$5 for wethers. No wool sold except occasional clips. Hay dull, \$25 for No. 1 timothy, though Pittsburgh quotes No. 1 at \$15; corn, 80c; oats, 45c; 50c. Fertilizer, 16c; A. Phosphate, \$26.—Bruce McNinch.

It is just as profitable, to remove weed trees from the woodlot, as it is to weed the garden; besides you can burn the wood from the crooked, defective trees; and from those that are not good timber species.



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Palmer's York Spraying Lime, 98% Calcium, in 200 and 300 mesh.

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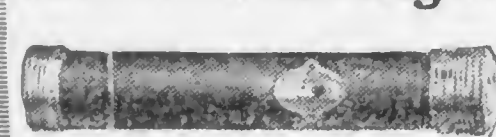
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Very good late variety. Yields enormous crops of large, round, white tubers. Very hard and late maturing. Ship when wanted. Prices, both varieties, 22 bushels, 25 bushels (107 lbs.). Bags free.

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In many places a lantern or lamp is not convenient or safe when you need a flashlight. The battery-operated flashlight is the only safe, reliable, and convenient light source when you need it. It is the only flashlight that is safe to use in the dark where you need it most.

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Pennsylvania Farmer

261 S. Third St. Phila., Pa.

FARM DEMONSTRATION PLANS FARM LABOR—A SOCIAL SURVEY FOR A MARYLAND COUNTY

(Continued From Last Week.)

Cecil County, Maryland, for the year of 1921 is to work with the County Agent for better production of its farm crops, lower costs, and better livestock. The work is to be carried on during the year by members of local organizations with the assistance of the County Agent and with the co-operation of the extension service of the state. This work carried on by the members of local organizations will give greater scope in demonstrations of better agriculture and will therefore, in reaching conclusions, be of greater value than work done heretofore.

The work for the year is to be carried on in the form of demonstrations, the objects of which are briefly outlined below.

Demonstration No. 1—One hundred acres of soy beans to be divided as follows: 60 acres for hay and 40 for seed. The hundred acres are to be divided and worked by ten members selected from a local organization. The seed used will be the Wilson or the Virginian. The amount per acre for hay will be two bushels, using 300 pounds of the best 2-8-2 fertilizer on the market and sowing the plot as near May 15th as conditions will permit.

In growing the beans for seed the same kind of seed will probably be used. The amount per acre will be one-third to one-half bushel sown in rows 28 inches apart.

Soy beans have had a fine start in this county and the outlook is so promising it is thought best to give the culture of them a boost. They are much more profitable than oats. They will grow in a short season, allowing plenty of time for the seedling of wheat in the mid-fall. The experience generally is that increased yields follow a crop of soy beans because of the ability to plant to gather nitrogen from the air and store it in the form of nodules on the roots for the use of other crops.

Demonstration No. 2—Fifty acres of potatoes giving special emphasis to variety tests and control of diseases.

Demonstration No. 3—Crop rotation for the foraging of hogs, using the crops adapted to county conditions and limiting the number of hogs at the option of the demonstrators. The crops to be used are Canadian field peas with oats, rape, soy beans and corn.

The improvement of livestock program includes five demonstrations in the feeding purebred sows. The suggestion is made that each community be pledged to secure five parties who will purchase a purebred gilt and to keep a record of the expense of producing a litter and determine the profit or loss resulting.

Five demonstrations will be conducted in the feeding of balanced rations to dairy herds. In another set of five demonstrations the relative merits of soy beans and mixed hay will be tested out over a reasonable period of time.

This plan of work is one of construction and the community at large will profit by it. The county agent and the State Department of Agriculture stand ready to help all they can to carry thru the work of each organization.—Murray J. Ewing, Cecil Co., Md.

There is no proverb in the whole catalogue of them more true than a penny saved is a penny got.—George Washington.

There is no reason why the experience of industry with shorter hours should not be duplicated to a larger degree in farm labor. The length of a day's work and the amount actually accomplished are by no means parallel. This is perhaps more true on the farm than it is in factory production work. Every farmer recognizes that some men can cover almost twice the ground than others in the same number of hours.

If this is true, the work accomplished is based upon other factors than the number of hours which a man is supposed to put in during the day. The efficiency of the farm depends very directly upon the efficiency of the farm management. If the work is laid out so that there is no lost motion and the man knows exactly what his work is to be, he can accomplish more in a half-day than he could in a full day under poor and inefficient supervision. The proper tools and equipment are often of more importance than the hours of labor. If a farmer would always see that machinery and tools were in proper condition for immediate use before they are put away, he would save many hours of valuable time. There is but little question that the management of a farm can make a difference of from one to two hours a day in the efficiency of the men. This being true, it is not at all unlikely that a reduction in the hours per day would not decrease the productivity or the labor cost of the farm.

It is hard to imagine any work on a farm except the operation of a tractor, where it would not be possible to accomplish as much in nine hours as in ten if the farmhand had the incentive to do so. On some farms there is no work on Saturday afternoon during the greater part of the year. If the farmhand is supposed to do work on Sunday, he should receive half a day at least twice a month, except during the busiest season. This allows an opportunity to go to town and make necessary purchases and enjoy a change of surroundings. The half Saturday holiday has always been a success wherever tried and is very well worth considering. Other farms delegate the Sunday work to the men in rotation so that they may have most of their Sundays free. This is very commendable. It would seem quite reasonable to allow the farmhand a few days each year as a definite vacation after the summer's work is over. If possible he should spend these few days away from the farm. If the length of hours is one of the chief objections of the farmhand to farm labor, then the farmer should use whatever means possible to reduce the hours provided he can secure the same amount of work accomplished per dollar. With labor saving machinery and proper tools together with efficient management, this can be done.

Bonus Plans

Many farmers have given careful consideration to the possibility of profit-sharing and bonus plans. It cannot be said that these have proven successful. The most common form of bonus plan is to pay the man a dollar a week extra at the end of the season, providing he will stay thru the year. There is no objection to this system, providing that it is a real bonus and not taken out of the weekly pay, which is actually need-



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Lacked by 10 year guarantee, the Reynolds Trade-mark on each and every package is your best roofing protection.

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Here is one of the biggest values ever offered to readers of this paper.

We'll send this splendid serge skirt and with it this beautiful white voile waist, \$10.00.

Without asking for one cent with the order. Skirt is made of good heavy weight serge, gathered at waist, wide loose belt. Two pockets trimmed with lacered buttons. Colors: Navy Blue or Black. Sizes waist 24 to 40 length, 38 to 42 inch.

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ROCK BOTTOM PRICES Just send your name and address, giving size and color of skirt wanted, also size of waist wanted. We'll send both by parcel post prepaid. You pay no money until we receive your order. Money back if not pleased. Here is positively a big \$6.00 value for only \$2.98. Send NOW as the number of free waists is limited. Order by Number 127 B1002.

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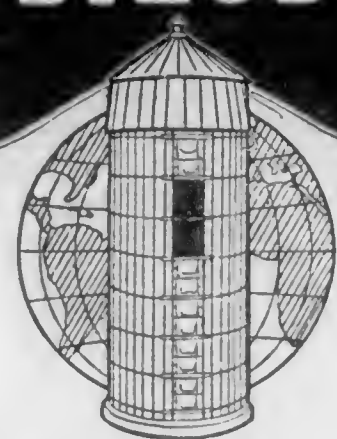
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The Eshleman Sheaf Elevator

Single or double chain. The great labor saving machine for the farm today.

Easy to operate, strong, light, convenient. 1 1/2 H.P. engine or motor will operate largest machine. Not an experiment, but a necessary part of your farm equipment, reduces the cost of harvesting your crops by saving from one to three men.

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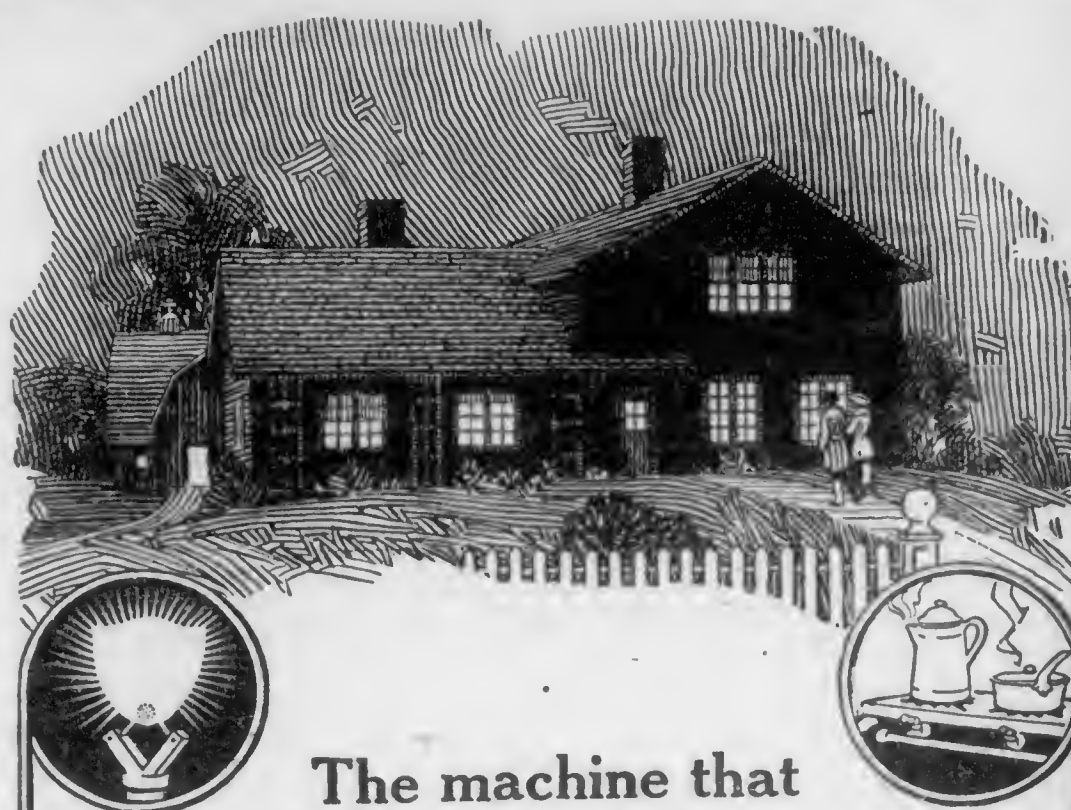
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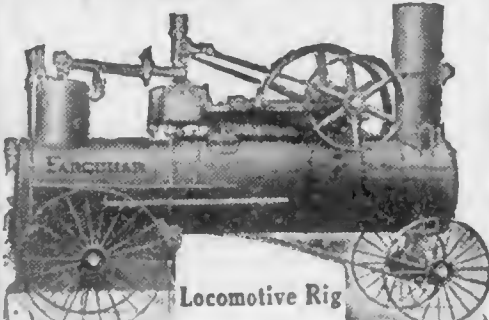
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STRAWBERRY PLANTS—All kinds, from seed, rooted, and fruited. We have a fine lot to offer at wholesale price.

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1000 for \$2.25. C. J. & C. WHALEY, MARTIN'S POINT P. O., S. C.

WANTED—A reliable and ambitious young married man, who understands machinery and gardening. To take charge and act as sexton in a new cemetery. Good farm house on main boulevard and trolley line, one quarter of mile from good public school.

WOODBINE CEMENT, Line Branch, N. J.

243 Broadway.

TALKS WITH THE BOYS

Building Houses for Our Bird Friends

ONE of the best ways to get well acquainted with birds is to build houses for them. Not all birds will use houses, nevertheless there are quite a number which will gladly accept them. If a bird-lover builds houses for birds and watches their home life all during the summer he will soon come to know Nature better and will be glad that he had the chance to do so. The best time to build bird houses is in winter for they may be put out in early spring and will have an opportunity to weather in which condition the birds like them much better than otherwise.

A common bird which takes very kindly to bird houses is the House Wren, a small brownish bird a little more than four inches long. His house may be made of 3 or 4-inch soft wood. The cavity should be 4 by 4 inches square and about 6 inches

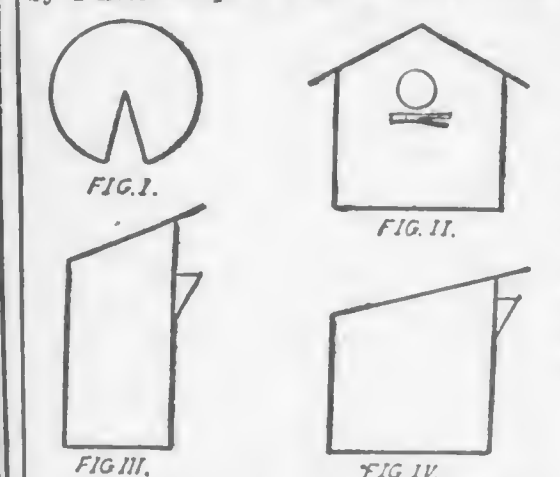


Fig. I—Shape of roof piece for roofing paper birdhouse.

Fig. II—Type of Wren box (front).

Fig. III—Side of box for Downy Woodpecker.

Fig. IV—Another type of Wren box.

(Sketches by John E. Richardson.)

deep. The entrance, which should be the size of a quarter is placed about two inches down from the roof. The latter must be slanting to let the water drain off. After the house is made it should be painted to prevent warping, preferably with gray or brown paint. Several of these houses should be made, as one pair of wrens will raise two or three broods a season and they will use a house only once a year. These Wren boxes may be put up in nearly any fairly open place from six to ten feet above the ground. Each fall after the houses are empty they should all be cleaned out, therefore it is a good plan to have a way to take off one side of the box. It may be hinged or it may slide in grooves.

Another common bird which appropriates bird-houses is the Bluebird. His houses should be the same as for the Wren except for the dimensions. The cavity should be 5 by 5 inches square and 8 inches deep and the entrance should be 1 1/2 inches in diameter. The distance above the ground is the same as for the Wren boxes. Above all do not put the entrance on the floor in any bird-house you build.

Cleats nailed on the inside of the barn shed just below the roof will help the Barn Swallows greatly.

The Downy Woodpecker prefers a house with a cavity 4 by 4 inches square and 8 to 10 inches deep with the diameter of the entrance 1 1/2 inches. The boxes for these little woodpeckers should be placed from 6

to 20 feet above ground. The Flicker, another member of the Woodpecker tribe, uses a box with the cavity 7 by 7 inches square and 16 to 18 inches deep. His entrance should be about 2 1/2 inches. If you build your Flicker boxes 8 by 8 inches square and 16 inches deep with a 3-inch entrance they can be used by either Screech Owls or Flickers. In either case they should be placed from 10 to 30 feet above the ground.

Your Downy Woodpecker boxes will also suit Tufted Titmice, Chickadees and white-breasted Nuthatches if you can induce them to stay over the summer with you.

Another very satisfactory type of bird-box may be made out of heavy roofing paper. The paper should be left in a warm place for a day before it is used to soften it. A round piece of wood is used for the bottom of the house. The box itself is made by a round cylinder of the paper. The roof is a round piece of the roofing material two inches larger in diameter than the bottom of the box. This piece is then cut as in Fig. I. The straight edges are lapped over and fastened with split rivets which are also used in the construction of the cylinder for the body of the box. Perches for all your houses may be made by nailing forked twigs or small blocks of wood just below the entrance.

If you build several bird-houses, put them up and clean them out each fall after they have been used, in a few years you will have a bird colony of surprising size besides getting much enjoyment from studying our birds.—Russell Richardson, Jr.

LETTERS FROM THE BOYS

Dear Editor—I like to read the Boys' Page so well that I thought I would write and help it along.

I live on a farm of 60 acres. My father has ten cows and two horses. I have a cow and milk her every day. I also have some Flemish Giant hares. I don't have far to go to school and am in the sixth grade. I am ten years old and have three sisters and one brother. We have three pigs, one dog, two cats and forty chickens. We have a few maple trees to tap for maple syrup.

This is not a very big letter, but I think it will help to fill up the Boys' Page. I can't think of any more, so I will close.—D. M. Abrams, Bradford Co., Pa.

Dear Editor—I am glad to see a page in Pennsylvania Farmer for the boys. I have read the Boys' Page for several weeks and have decided to write a letter.

I am 15 years old and am in the seventh grade in school. I live on a farm and have two brothers and three sisters. My older brother and I own a calf which we intend to sell in a few days. I have \$17.50 in the bank and I am going to put more in as soon as I can. I am going to raise some rabbits this coming summer; also some hogs as soon as I can get them. We are going to move before long to a farm of about 540 acres which we recently bought.—Robert F. Purnell, Washington Co., Md.

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Boys and Girls

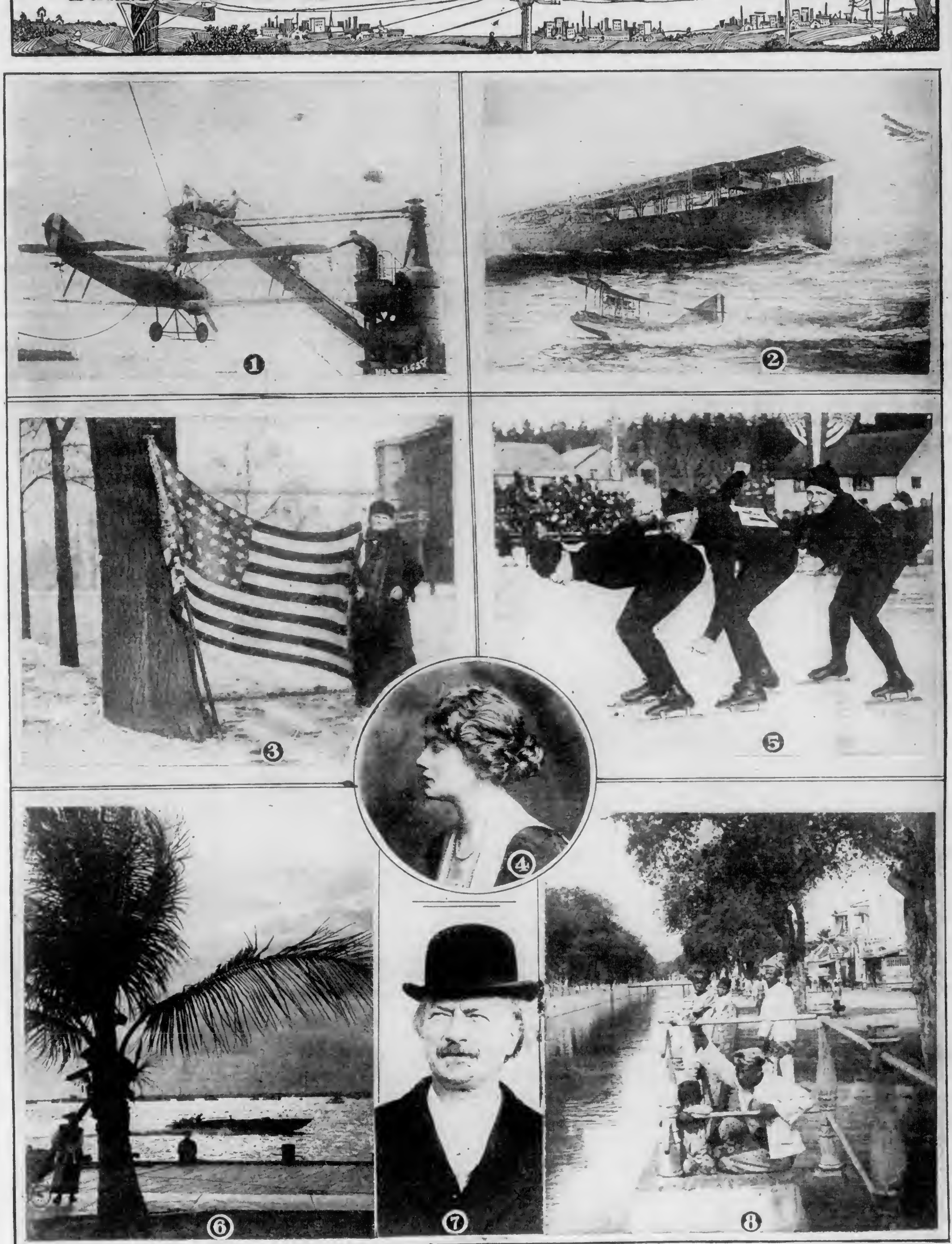
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PASSING EVENTS IN PICTURES



- 1—Photograph shows a Scout Plane being hoisted onto a Battleship.
- 2—The U. S. Jupiter, a former coaling ship, is being altered to refit her as an Aircraft Carrier. The deck will be flush all over so as to make an ideal platform for flying off and landing.
- 3—Mrs. Belle Acker of Chicago is shown with the flag she crocheted for President-elect Harding. It took her six months and she used 104 balls of yarn.
- 4—Lady Hamar Greenwood, wife of Chief Secretary for Ireland, who is getting the situation under control.
- 5—Trio striving for honors in International Skating Meet at Saranac Lake.
- 6—The "Orlo II" winner of the second prize in the Carl G. Fisher \$5000 gold trophy race at Miami, Florida.
- 7—Paderewski recently arrived in New York, declares that he will play no more and denies that his fingers have lost their facility as has been rumored.
- 8—Early in the morning the Natives of Batavia, Java, resort to this river's stairway for their morning bath and they also do their own laundering in its muddy waters.

(Photo Copyright by Underwood & Underwood.)



The Voice of the Pack

by Edison Marshall

CHAPTER XII

"I'LL TELL YOU WHY! Because some one else—evidently a cop—was already searchin' it. Both of us know there's nothin' there anyway. We've gone over it too many times. After a while he went away—but I didn't turn back yet. That wouldn't be Jim Gibbs. I shadowed him, just as you'd want me to. And he went straight back to the body."

"Yes?" Cranston had hard work curbing his impatience. Again Gibbs' eyes were full of ominous speculations.

"He stopped at the body, and it was plain he'd been there before. He went crawling thru the thickets, lookin' for clues. He done what you and me never thought to do—lookin' all the way between the trail and the body. He'd already found the brass shell you told me to get. At least, it wasn't there when I looked, after he'd gone. You should've thought of it before. But he found somethin' else a whole lot more important—a roll of papers that Hil-dreth had chucked into an old pine stump when he was dyin'. It was your fault Cranston, for not gettin' them that night. You needn't've been afraid of any one hearin' the shot and catching you red-handed. This detective stood and read 'em on the trail. And you know—just as well as I do—what they were."

"Darn you, I went back the next morning, as soon as I could see. And the mountain lion had already been there. I went back lots of times since. And that shell ain't nothing—but all the time I supposed I put it in my pocket. You know how it is—a fellow throws his empty shell out by habit."

Gibbs' eyes grew more intent. What was this thing? Cranston's tone, instead of commanding, was almost pleading. But the leader caught himself at once.

"I don't see why I need to explain any of that to you. What I want to know is this: why you didn't shoot and get those papers away from him?"

For an instant their eyes baffled. But Gibbs had never the strength of his leader. If he had, it would have been asserted long since. He sucked in his breath, and his gaze fell away. It rested on Cranston's rifle, that in some manner had been pulled up across his knees. And at once he was cowed. He was never so fast with a gun as Cranston.

"Blood on my hands, eh—same as on yours?" he mumbled, looking down. "What do you think I want, a rope around my neck? These hills are big, but the arm of the law has reached up before, and it might again. You might as well know first as last I'm not goin' to do any killin's to cover up your murders."

"That comes of not going myself. You fool—if he gets that evidence down to the courts, you're broken

the same as me."

"But I wouldn't get more'n a year or so, at most—and that's a heap different from the gallows. I did aim at him—"

"But you just lacked the guts to pull the trigger!"

"I did, and I ain't ashamed of it. But besides—the snows are here now, and he won't be able to even get word down to the valleys in six months. If you want him killed so bad, do it yourself."

This was a thought indeed. On the other hand, another murder might not be necessary. Months would pass before the road would be opened, and in the meantime Cranston could have a thousand chances to steal back the accusing letters. Perhaps they would be guarded closely at first, but by the late winter months they would be an old story, and a single raid on the house might turn the trick. He didn't believe for an instant that the man Gibbs had seen a detective. He had kept too close watch over the roads for that.

"A tall chap, in outing clothes—dark-haired and clean-shaven?"

"Yes?"

"Wears a tan hat?"

"That's the man."

"I know him—and I wish you'd taken those papers away from him and slapped his face, and he would not even have put up his arms. And now he'll hide 'em somewhere—afraid to carry 'em for fear he meets me. That's failin'—the tenderfoot that's been staying at Lennox's. He's a lunger."

"He didn't look like no lunger to me."

"But no matter about that—it's just as I thought. And I'll get 'em back—mark my little words."

In the meantime the best thing to do was to move at once to his winter trapping grounds—a certain neglected region on the lower levels of the North Fork. If at any time within the next few weeks, Dan should attempt to carry word down to the settlements, he would be certain to pass within view of this camp.

But he knew that the chance of Dan starting upon any such journey before the snow had melted was not one in a thousand. To be caught in the Divide in the winter means to be snowed in as completely as the Innuits of upper Greenland. No word could pass except by a man on snowshoes. Really there was no urgency about this matter of the evidence.

Yet if the chance did come, if the house should be left unguarded, it might pay Cranston to make an immediate search. Dan would have no reason for supposing that Cranston suspected his possession of the letters; he would not be particularly watchful, and would probably pigeon-hole them until spring in Lennox's desk.

And the truth was that Cranston had reasoned out the situation almost perfectly. When Dan awakened in the morning, and the snow lay a foot deep over the wilderness world, he knew that he would have no

chance to act upon the Cranston case until the snows melted in the spring. So he pushed all thought of it out of his mind and turned his attention to more pleasant subjects. It was true that he read the documents over twice as he lay in bed. Then he tied them into a neat packet and put them away where they would be quickly available. Then he thrust his head out of the window and let the great snowflakes sift down upon his face. It was winter at last, the season that he loved.

He didn't stir from the house, that first day of the storm. Snowbird and he found plenty of pleasant things to do and talk about before the roaring fire that he built in the grate. He was glad of the great pile of wood that lay outside the door. It meant life itself, in this season. Then Snowbird led him to the windows, and they watched the white drifts pile up over the low underbrush.

When finally the snowstorm ceased, five days later, the whole face of the wilderness was changed. The buckbrush was mostly covered, the fences were out of sight; the forest seemed a clear, clean sweep of white, broken only by an occasional tall thicket and by the great, snow-covered trees.

When the clouds blew away, and the air grew clear, the temperature began to fall. Dan had no way of knowing how low it went. Thermometers were not considered essential at the Lennox home. But when his eyelids congealed with the frost, and his mittens froze to the logs of firewood that he carried thru the door, and the pine trees exploded and cracked in the darkness, he was correct in his belief that it was very, very cold.

But he loved the cold, and the silence and austerity that went with it. The wilderness claimed him as never before. The rugged breed that were his ancestors had struggled thru such seasons as this and passed a love of them down thru the years to him.

When the ice made a crust over the snow, he learned to walk on snowshoes. At first there were painful ankles and endless floundering in the drifts. But between the fall of fresh snow and the thraws that softened the crust, he slowly mastered the art. Snowbird—and Dan never realized the full significance of her name until he saw her flying with incredible grace over the snow—laughed at him at first and ran him races that would usually end in his falling head-first into a ten-foot snowbank. She taught him how to ski and more than once she would stop in the middle of an earnest bit of pedagogy to find that he was not listening at all. He would seem to be fairly devouring her with his eyes, delighting in the play of soft pinks and red in her cheeks, and drinking, as a man drinks wine, the amazing change of light and shadow in her eyes.

She seemed to blossom under his gaze. Not one of those short winter days went by without the discovery of some new trait or little vanity to astonish or delight him—sometimes an unlooked-for tenderness toward the weak, often a sweet, untainted philosophy of life, or perhaps just a lowering of her eyelids in which her eyes would show suspicious thru the lashes, or some sweeping, exuberant gesture startlingly graceful.

Lennox awakened one morning with the realization that this was one of the hardest winters of his experience. More snow had fallen in the night and had banked halfway up his win-

dows. The last of the shrubbery—except for the ends of a few tall bushes that would not hold the snow—was covered, and the roofs of some of the lower outbuildings had somewhat the impression of drowning things, striving desperately to keep their heads above water. He began to be very glad of the abundant stores of provisions that overcrowded his pantry—savory hams and bacon, dried venison, sacks of potatoes and evaporated vegetables, and, of course, canned goods past counting. With the high fire roaring in the grate, the season held no ill for them. But sometimes, when the bitter cold came down at twilight, and the moon looked like a thing of ice itself over the snow, he began to wonder how the wild creatures who wintered on the Divide were faring. Of course most of them were gone. Wolf, long since, had grunted and mumbled his way into a winter lair. But the wolves remained, strange gray shadows on the snow, and possibly a few of the harder smaller creatures.

More than once in those long winter nights their talk was chopped off short by the song of the pack on some distant ridge. Sometime, when the world is old, possibly a man will be born that can continue to talk and keep his mind on his words while the wolf pack sings. But he is certainly an unknown quantity today. The cry sets in vibration curious memory chords, and for a moment the listener sees in his mind's eye his ancient home in an ancient world—Darkness and Fear and Eyes shining about the cave. It carries him back, and he knows the wilderness as it really is; and to have such knowledge dries up all inclination to talk, as a sponge dries water. Of course the picture isn't entirely plain. It is more a thing guessed at, a photograph in some dark part of an under-consciousness that has constantly grown more dim as the centuries have passed. Possibly sometime it will fade out altogether; and then a man may continue to discuss the weather while the Song from the ridge shudders in at the windows. But the world will be quite cold by then, and no longer particularly interesting. And possibly even the wolves themselves will be tamed to play dead and speak pieces—which means the wilderness itself will be tamed. For as long as wild lasts, the pack will run thru it in the winter. They were here in the beginning, and in spite of constant war and constant hatred on the part of men, they will be here in the end. The reason is just that they are the symbol of the wilderness itself, and the idea of it continuing to exist without them is stranger than that of a nation without a flag.

It wasn't quite the same song that Dan had listened to in the first days of fall. It had been triumphant then, and proud with the wilderness pride. Of course it had been sad now, then, too, but it was more sad now. And it was stranger, too, and crept farther into the souls of its listeners. It was the song of strength that couldn't avail against the snow, possibly of cold and the despair and courage of starvation. These three that heard it were inured to the wilderness; but a moment was always needed after its last note had died to regain their gaiety.

"They're getting lean and they're getting savage," Lennox said one night, stretched on his divan before the fireplace. He was still unable to walk; but the fractures were knitting slowly and the doctor had promised that the summer would find him

well. "If we had a dog, I wouldn't offer much for his life. One of these days we'll find 'em in a big circle around the house—and then we'll have to open up with the rifles."

But this picture appalled neither of his two young listeners. No wolf pack can stand against three marksmen, armed with rifles and behind oaken walls.

Christmas came and passed, and January brought clear days and an ineffective sun shining on the snow. These were the best days of all. Every afternoon Dan and Snowbird would go out on their skis or on snowshoes, unarmed except for the pistol that Snowbird carried in the deep pocket of her mackinaw. "But why not?" Dan replied to Lennox's objection. "She could kill five wolves with five shots, or pretty near it, and you know well enough that that would hold 'em off till we got home. They'd stop to eat the five. I have had enough time keeping up with her as it is, without carrying a rifle." And Lennox was content. In the first place, the wolf pack has to be desperate indeed before it will even threaten human beings; and knowing the coward that the wolf is in the other three seasons, he couldn't bring himself to believe that this point was reached. In the second, Dan had told the truth when he said that five deaths, or even fewer, would repel the attack of any wolf pack he had ever seen. There was just one troubling thought. He had heard, long ago, and he had forgotten who had told him, that in the most severe winters the wolves gather in particularly large packs; and a quality in the song that they had heard at night seemed to bear it out. The chorus had been exceptionally loud and strong, and he had been unable to pick out individual voices.

The snow was perfect for skiing. Previously their sport had been many times interrupted either by the fall of fresh snow or a thaw that had softened the snow crust; but now every afternoon was too perfect to remain indoors. They shouted and romped in the silences, and they did not dream but that they had the wilderness all to themselves. The fact that one night Lennox's keen eyes had seen what looked like the glow of a camp fire in the distance didn't affect this belief of theirs at all. It was evidently just the phosphorus glowing in a rotten log from which the winds had blown the snow.

Once or twice they caught glimpses of wild life: once a grouse that had buried in the snow flushed from their path and blew the snow-dust from its wings; and once or twice they saw snowshoe rabbits bounding away on their feet over the drifts. But just once they caught sight of a wolf. They were on snowshoes on a particularly brilliant afternoon late in January.

He was a lone male, evidently a stranger from the pack, and he leaped from the top of a tall thicket that had remained above the snow. The man and the girl had entirely different reactions. Dan's first impression was amazement at the animal's condition. It seemed to be in the last stages of starvation: unbearably gaunt, with rib bones showing plainly even thru the furry hide. Ordinarily the heavy furred animals do not show signs of famine; but even an inexperienced eye could not make a mistake in this case. The eyes were red, and they carried Dan back to his first adventure in the Oregon forest—the day he had shot the mad coyote. Snowbird thought of the beast only as an

enemy. The wolves killed her father's stock; they were brigands of the worst order; and she shared the hatred of them that is a common trait of all primitive peoples. Her hand whipped back, seized her pistol, and she fired twice at the fleeing figure. The second shot was a hit: both of them saw the wolf go to its side, then spring up and race on. Shouting, both of them sped after him. In a few moments he was out of sight among the distant trees, but the track led them on clear down the next canyon. And now they cared not at all whether they found him: it was simply a tramp in the out-or-doors; and both of them were young with red blood in their veins.

But all at once Dan stopped in his tracks. The girl sped on for six paces before she missed the sound of his snowshoes; then she turned to find him standing, wholly motionless, with eyes fixed upon her.

It startled her, and she didn't know why. A companion abruptly freezing in his path, his muscles inert, and his eyes filling with speculations is always startling. When this occurs, it means simply that a thought so compelling and engrossing that even the half-unconscious physical functions, such as walking, cannot continue, has come into his mind. And it is part of the old creed of self-preservation to dislike greatly to be left out on any such thought as this. If danger is present, the sooner it is identified the better.

"What is it?" she demanded. He turned to her, curiously intent. "How many shells have you in that pistol?"

She took one breath and answered him. "It holds five, and I shot twice. I haven't any others."

"And I don't suppose it ever occurred to you to carry extra ones in your pocket?"

"Father is always telling me to—and several times I have. But I'd shoot them away at target practice and forget to take any more. There was never any danger—except that night with a cougar. I did intend to—but what does it matter now?"

"We're a couple of wise ones, going after that wolf with only three shots to our name. Of course by himself he's harmless—but he's likely enough to lead us straight toward the pack. And Snowbird—I didn't like his looks. He's too gaunt, and he's too hungry—and I haven't a bit of doubt he waited in that brush for us to come, intending to attack us—and lost his nerve the last thing. That shows he's desperate. I don't like him, and I wouldn't like his pack. And a whole pack might not lose its nerve."

"Then you think we'd better turn back?"

"Yes, I do, and not come out any more without a whole pocket of shells. I'm going to carry my rifle, too, just as Lennox has always advised. He's only got a flesh-wound. You saw what you did with two cartridges—got in one flesh-wound. Three of 'em against a pack wouldn't be a great deal of aid. I don't mean to say you can't shoot, but a jumping, lively wolf is worse than a bird in the air. We've gone over three miles; and he'd lead us ten miles farther—even if he didn't go to the pack. Let's go back."

"If you say so. But I don't think there's the least bit of danger. We can always climb a tree."

"And have 'em make a beautiful circle under it! They've got more pa-

A Story for Children

Marjorie's Playmate

MARJORIE JAMES was a little girl who lived in a great big city. The James home was one of a row, that is, houses were built right on to their own house on both sides. This little girl had no big yards and fields to play in such as boys and girls who live in the country have. On that account, Marjorie could have no pets and she wanted something for a playmate, very badly.

One day some people moved next door, who had some little baby chickens. One of the little peeps, escaped and squeezed thru the fence. Marjorie was playing and when she saw it, she squealed with joy and picked



Marjorie and Speckle

it up very gently. She played with the little chicken so happily that she did not see a man standing at the fence watching her.

"Would you like to have that little chick for your own?" he asked.

Marjorie jumped, "Oh, may I?" she breathed.

"Yes, if your mother will let you have it."

Marjorie's mother could not refuse when she saw how happy her little girl was. So they kept the chicken and every morning, noon and night it was fed, petted and cared for. It

ience than we have—and we'd have to come down sometime. Your father can't come to our help, you know. It's the sign of the tenderfoot not to think there's any danger—and I'm not going to think that way any more."

They turned back and munched in silence a long time.

"I suppose you'll think I'm a coward," Dan asked her humbly.

"Only prudent, Dan," she answered, smiling. Whether she meant it, he did not know. "I'm just beginning to understand that you—living here only a few months—really know and understand all this better than I do." She stretched her arms wide to the wilderness. "I guess it's your instincts."

"And I do understand," he told her earnestly. "I sensed danger back there just as sure as I can see your face. That pack—and it's a big one—is close; and it's terribly hungry. And you know—you can't help but know—that the wolves are not to be trusted in famine times."

"I know it only too well," she said. Then she paused and asked him about a strange grayness, like snow blown by the wind, on the sky over the ridge.

(Continued Next Week.)

Visitor: I hardly know what to do with my week-end.

Native: I suggest that you put a hat on it.

became very tame and seemed to understand how to play. When Marjorie chased it, it would run and flap its wings, enjoying the game as much as its playmate.

All went well until the chicken, now called Speckle, grew bigger. Then it began to take privileges and go into the house. Once inside Speckle ate anything she wanted or roosted any place that looked comfortable. Mrs. James grew tired of this and one day, after Speckle had jumped upon some clean clothes with her dirty feet, she threatened to kill her for dinner. Marjorie cried and Speckle's life was spared that time.

The minister came to dinner one evening and just as he finished asking the blessing, there was a flap of wings and Speckle landed on the table right in front of Mrs. James.

"Oh! oh!" was all Mrs. James could say, but she looked at her small daughter, who was laughing into her napkin, and whispered:

"This is Speckles last night. We simply can't have this happen again."

That night, after every one was asleep, Marjorie tip-toed downstairs and brought Speckle into the house.

"Dear old Speckle," she said, with tears choking her. "This is your last night and I'm going to let you sleep in the house. Good night, Speckle."

In the middle of the night, everyone was awakened by a loud cackling and a chair falling over. Mr. James ran down stairs just in time to see a man running thru the door. The safe was partly opened but nothing was gone.

"Well, well, Speckle, you're a pretty good scout after all," he said, smoothing Speckles ruffled feathers. I guess we'll keep you a while longer, as we seem to need you."—L. M. K.

WORK

Let me do my work from day to day, In field or forest, at the desk or loom. In roaring market place or tranquil room

Let me but find it in my heart to say When vagrant wishes beckon me astray,

"This is my work, my blessing, not my doom;

Of all who live I am the one by whom This work can best be done in the right way."

Then shall I see it not too great nor small

To suit my spirit and so prove my powers;

Then shall I cheerfully greet the laboring hours

And cheerfully turn when the long shadows fall

At eventide to play and love and rest, Because I know for me my work is best

Henry Van Dyke.

Understan'?

"Now boys," said the schoolmaster to the geography class. "I want you to bear in mind that the affix 'stan' means 'the place of.' Thus we have Afghanistan, the place of Afghans—also Hindustan, the place of Hindus. Can anyone give another example?"

Nobody appeared very anxious to do so until little Johnny Snaggs, the joy of his mother and the terror of cats, said proudly, "Yes, sir, I can. Umbrellastan, the place for Umbrellas."

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is a big help, too. By killing disease germs and skin parasites, and by keeping stables and pens in sanitary condition, it protects the health and promotes the comfort of live stock. That means but one thing—better results—bigger profits.

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Care of Brood Sows

By W. H. TOMHAVE

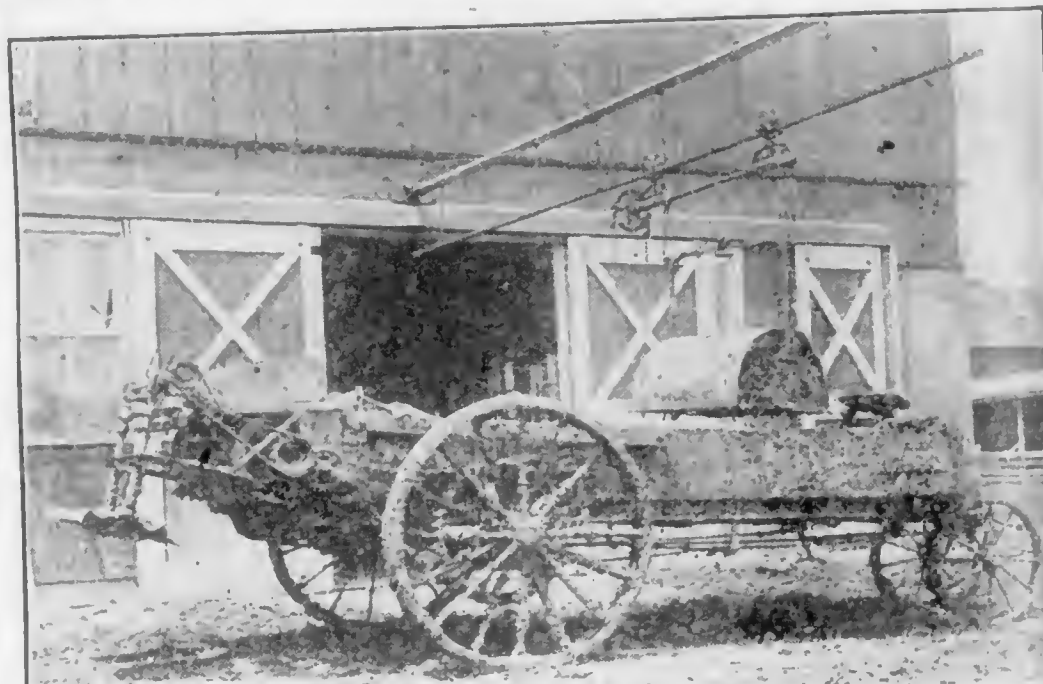
MOST of the brood sows upon the farms are bred to farrow during these months may be three fold. In the first place, the farmer as a rule has more time to look after the brood sows before the rush of spring work comes on. The second reason is that the pigs can be developed and ready for an early fall market before it gets too cold and before the bulk of the hogs from the corn belt are sent to market and usually cause a depression in the price. The third reason is that the pigs are large enough to go on forage crops when they are ready and are well enough developed to make good use of the forage crops that are planted.

The success of the swine growing business depends in a large measure upon the number of pigs that are farrowed and the number raised. The general condition and strength of the litter at farrowing time is a factor in saving a large percentage of the pigs farrowed.

We have previously discussed the feeding of the brood sow during the

ance a little more bulky by adding a little bran. The day before she is to farrow the grain can be kept from her entirely with the possible exception of a handful or two of feed in water. The same treatment should be given her the day after farrowing. Give her all the lukewarm water that she will drink. The second day after farrowing allow her a light feed of shorts and gradually increase it daily so that she is back on her full allowance of feed at the end of a week.

The pen in which the sow is placed for farrowing should be clean and dry. It should be equipped with guard rails about 6 to 8 inches from the floor so that the sow will not lie on the small pigs by crowding them against the wall. The pen should be well bedded but do not use too much straw. If too much straw is used the small pigs may get covered with straw and the brood sow will step on them without noticing that they are under her feet. Sometimes small pigs are lost because the owner wants to be kind to them by giving



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The Economical Way to Handle Manure

gestation period. It may be well, however, to again suggest the use of a ration that is rich in protein and also that the sows have an abundance of exercise. Daily exercise has a tendency to stimulate the appetite of the sow and it also helps to keep her in a healthy and thrifty condition. A good live stock man always keeps a record of the date of breeding of all on the farm as it is sometimes difficult to tell exactly when a sow is going to farrow unless there is a record of the breeding date. The gestation period of a brood sow is about 112 days.

About a week before the sow is to farrow remove her from the balance of the herd and place her in a separate lot or farrowing pen. Such treatment will get her accustomed to her new environment and she will not be so restless as when she is taken from the balance of the herd about a day before farrowing.

The brood sow that is about to farrow should not have an abundance of grain. If the sow has been getting a liberal supply of food a good rule to follow is to cut her grain ration in half about four or five days before farrowing and make her feed allow-

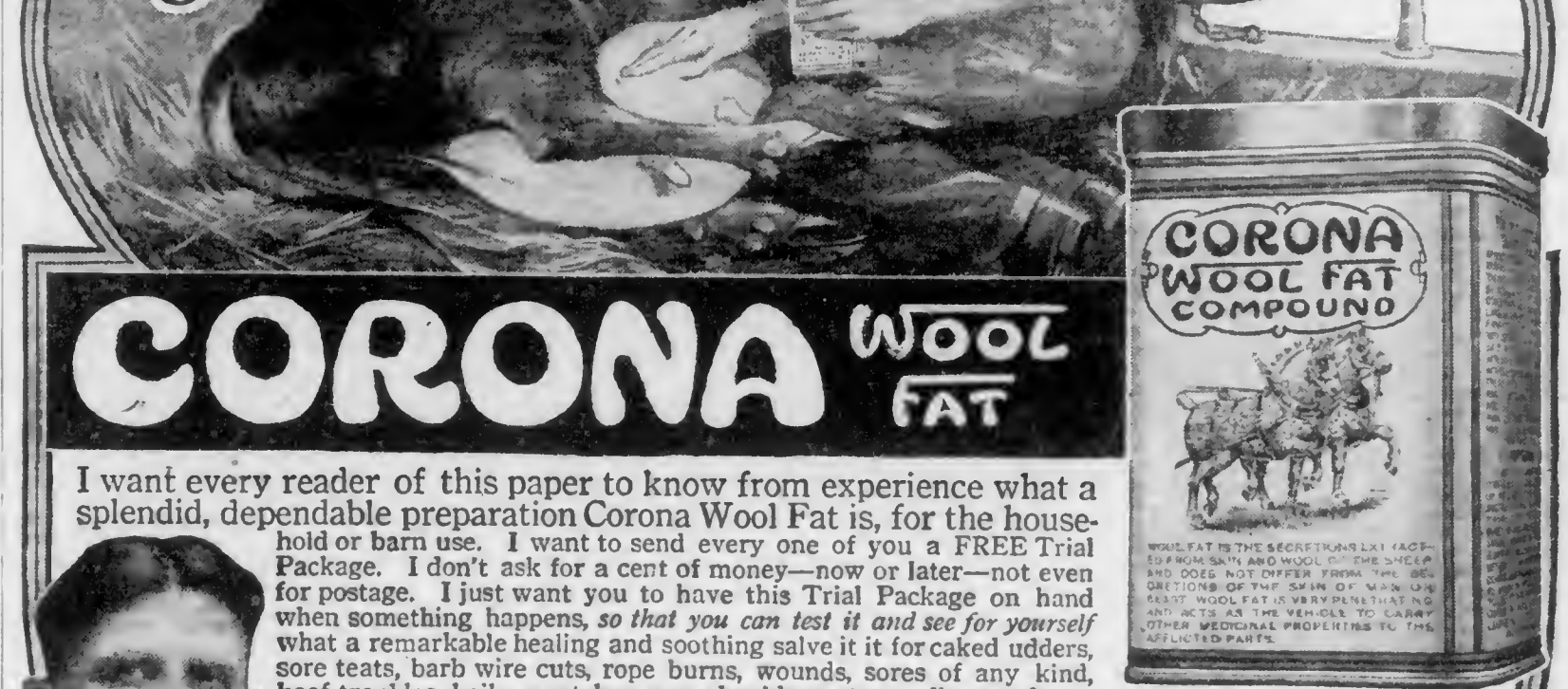
them an extra amount of straw. If the weather is cold at farrowing time it is often a wise practice to remove the pigs from the sow when they are first born and place them in a basket or barrel with some heated brick or stone and straw in the bottom to keep them warm. This same practice may be followed if the brood sow is nervous and restless. When this is practiced they should be put back with the sow every three hours for suckling. If the weather is mild and the sow is quiet it is usually best to leave the pigs with the sow and she will take care of them in good shape.

BERKSHIRE CONGRESS MEETS

The annual American Berkshire Congress and sale was held in the First Regiment Armory, Philadelphia, Feb. 16 to 18. Two days of the meeting were devoted to the discussion and demonstration of Berkshire problems and the sale of 55 purebred Berkshires was held Friday afternoon.

The business session and the report of committees took place at the Hotel Lorraine, Wednesday afternoon.

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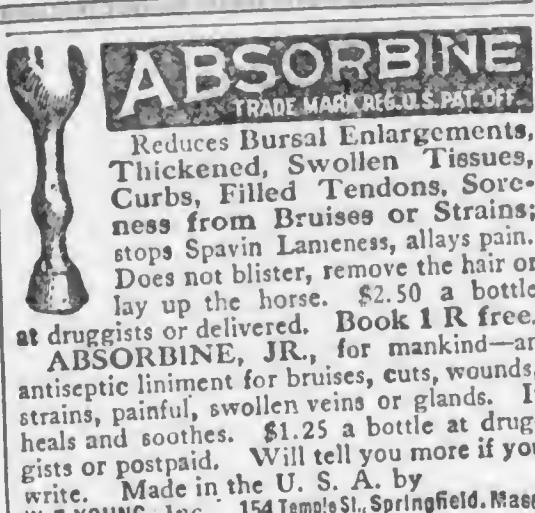
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COUNTY NOTES

Union Co., Pa.—Again the wheat fields are covered with snow which is needed protection. Wheat is being marketed slowly at \$1.60 to \$1.75 per bushel to local mills, as the biggest mill in the county, Buffalo Flour Mills, is not running or buying any wheat at present.

Small lots of corn have been sold at 70c to supply teams at the mines, but the bulk of the crop is in farmers' hands yet. With grain, stock and milk at lower levels, farmers have been slow about ordering fertilizers until prices dropped as they have some lately, and likely not as much will be used as last year.

Bologna cows shipped from the county lately sold for the price of 14 years ago, dealers say. Steer feeders are urged to hold their cattle until May or June with the idea of getting cost for feed. Several carloads of Western horses have been sold lately at \$350 to \$760 for mated teams to farmers, as very few farmers here raise their own horses.

Public sales of live stock have begun, and will continue daily until April second. At one sale good grade cows, 6 in number, averaged \$107, but were bought mostly by relatives of the man having the sale. Farmers' institutes of one day each were held at three places last week and were fairly well attended for this county. Hope the so-called "daylight saving bill" gets the defeat it deserves, as it should be the "daylight wasting law" for such it is to most people.—J. N. Glover.

Wyoming Co., Pa.—At this writing the weather has been unusually fine. In some places it was difficult to get ice off the river but was plentiful and of good quality on ponds. Farmers are cutting wood, hauling manure and getting ready for spring work. Farm help seems to be more plentiful than for several years, and at somewhat reduced wages. But still too high according to prices received by farmers. Milk is \$2.10 per 100 in the 200-mile zone; eggs, 30c doz.; butter, 45c lb.; chickens, 30¢ @ 32¢ lb.; dressed beef, 10c lb.; dressed pork, 12¢ @ 13c.

Feed prices are substantially lower, which helps the dairymen. Corn meal, \$2.00; oats, \$2.15; gluten, \$2.40; cottonseed, \$2.60; oil meal, \$2.65; bran, \$2.10. This is almost exclusively a dairy section and the recent slump in prices of livestock and milk is opening the dairymen's eyes to the necessity of keeping only high producers. Many are changing from grades to purebreds and are testing cows on the accredited herd plan. So perhaps the dark cloud is not without a silver lining. Sometimes it takes a hard fall to get us out of the rut.—P. A. Valentine.

Blair Co., Pa.—We are having some real winter here now. We have sixteen inches of snow and the thermometer registered as low as 8 below zero, while ten days ago it was up to 62 degrees above. There is quite a lot of colds and tonsillitis. The roads in some places are in a deplorable condition. The farmers around here are all against the daylight saving plan. If the city people want to go to work an hour earlier let them do so, no use to change the time.

The markets are as follows: Apples, \$1 bu.; potatoes, \$1.25; corn, \$1; wheat, \$1.80; oats, 75c; chickens, 30c lb.; eggs, 45c dozen. There are not many sales this spring, lots of people moving from town to the country.—H. M. McVey.

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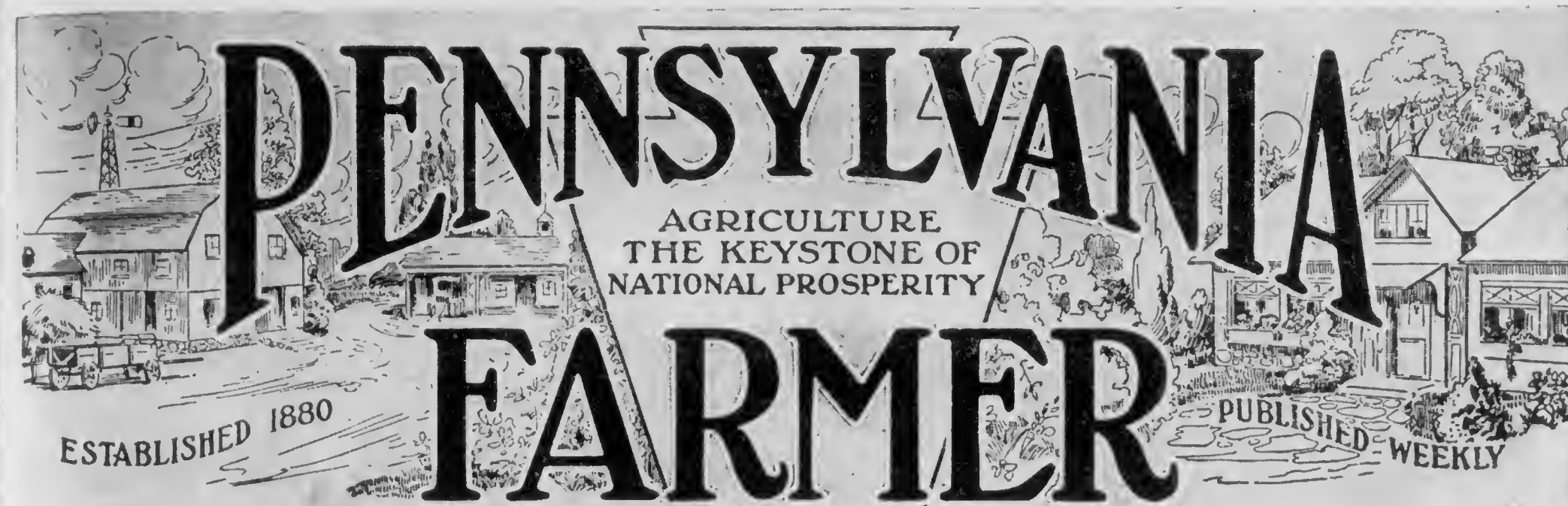
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PHILADELPHIA, PA., SATURDAY, MARCH 19, 1921

Number—12



Studying the Potato Markets

By DANIEL DEAN

INCREASED production of potatoes as well as every other farm product has been what every farmer, every experiment station, every agricultural college and every department of agriculture has been working for for the last fifty years. The scientific agencies have worked to increase production because they were supported by taxes for that purpose. Every farmer had to keep up-to-date to increase his production, for if he did not, others would do so, and he would be ruined by the competition of those who adopted the most up-to-date methods, crops and tools. It was the old case of "The Devil take the hindmost."

Today, marketing has taken the place of increased production as the topic which most interests farmers, whether at an agricultural meeting, or when two neighbors talk across the fence. I have talked to the potato growers of four states this winter at their Farmer's Weeks in Pennsylvania, Michigan, Ohio and at Cornell, New York. At every one of these meetings I find that the one vital interest was well expressed by a veteran farmer when he said: "We all know how to produce a crop too big to sell. What we want to know now is how to sell what we have left of last year's crop for enough to stay in business next summer."

The problem of the farmer's marketing his crop has been attacked from every angle. A few years ago direct sale to the consumer was advocated. Just now, much emphasis is being placed on farmers' co-operative organizations for marketing potatoes, as in Virginia, Michigan and Minnesota. It is often forgotten that the percentage of the whole American crop so marketed is yet very small. The rest of us either sell direct to the consumer for thru a longer or shorter chain of dealers.

Need of Accurate Information

No matter what method the potato grower uses to sell his crop, the difference between profit and loss for his year's work, and often that of having any wages at all for his year's labor, will depend on his ability to know how, when and where to sell his crop. It costs just as much to produce a crop that is then marketed wisely as for one that is thrown on the market without any real effort to find what it should and would bring. Few farmers yet know how many different aids to marketing the grower has, and how to find and use them. These aids require but little time to study, but their use pays far larger dividends in cash than does the same amount of work expended in producing the crop.

Daily Market Report

Every day the branches of the National Bureau of Markets all over the United States pub-

lishes a bulletin giving potato markets. For example, that from my nearest station, Rochester, N. Y., gives the previous day's markets in the great consuming centers of the East and Middle West. Not only is the sale price of every important variety given, but also the receipts in number of car loads, stock on hand and the tendency of the market, weak, strong or otherwise. Next is given the markets at the principal shipping centers. Each tells whether farmers are hauling or not, the prices paid to farmers, the prices at which dealers are shipping and the market tendencies. Finally, these reports give the daily report of the number of car lots shipped. With a small amount of experience in studying these daily market reports it is easy to forecast price changes in any center.

Few potato growers are as well acquainted with the daily market report as they are with the monthly reports of the Bureau of Crop Estimates, which get so much greater newspaper publicity. Every month from July to December the Bureau of Crop Estimates gets out a most careful report estimating how many bushels of potatoes have been already produced, and how many will be produced for the whole season, finishing with the December estimate after the crop is all dug. This report is the foundation upon which the northern potato grower must sell his crop. It tells him just how many potatoes his competitors have in other states, and how production compares with other years.

The 400,000,000 Bushel Crop

Potato growers, dealers and consumers have thought of but little all the fall and winter so far excepting the expression "400 million bushel crop." It sounds big. But every one has at the same time forgotten another big figure reported by the Census Bureau, that of 105,683,108 consumers we have in the United States today to eat the crop. When we work out just how many bushels per consumer there were produced, we find that there have been a number of much larger crops, and that the per capita of 4.07 bushels is only ten pounds apiece more than we have been using up in the average of the three war years just past, and about fifteen pounds each more than the average before the war, 3.78 bushels.

All thru the fall and winter every one has been thinking that there must be enormous quantities of potatoes somewhere, sure to smash the price as soon as they began to move. Every grower was anxious to get his sold first, and the result has been that markets have been steadily forced down for months by the constant pressure of more potatoes than the market could quickly

use each day. Each day the Bureau of Markets reports that the car lot movement of potatoes breaks all records, and still the growers keep on selling, not only by car lots, but, now that freights are higher, by truck to an amount never dreamed of before.

What We Now Have Left

On every January first the Bureau of Crop Estimates gets out another report different from the kind we have been discussing. Its reporters all over the United States report how many potatoes were left on hand January first from the preceding year's crop, how many held by growers, and how many by dealers. This report does not get into city newspapers to any extent. It is what the northern potato grower needs far more than he needs the summer estimates of how many will be produced later. He needs it because it tells him in the plainest way how fast the potato crop is being eaten, and by that, whether to sell faster to get rid of a surplus, or to sell slower when the remaining stock is short. Out of the whole crop grown in 1920, 430,458,000 bushels, there was left on hand January first only 145,286,000 bushels. This shows that the nation has eaten more potatoes this year than ever before.

Consumption to Date

The movement of potatoes to date is the heaviest ever known, but what is equally important, it is more than ever a movement into consumption and not into storage. Eastern potato growers are very thoroly familiar with the fact that dealers of all kinds are storing less potatoes than usual this season, and this is further proved by the January first report which shows that dealers are only holding 14.7 per cent of the present crop against 23.1 per cent a year ago. All thru the East and the Middle West hundreds of thousands if not millions of families living in villages, small cities and the suburbs of large cities have in other years bought in the fall ten to twenty-five bushels apiece and stored for use in winter and spring. This year they have very largely not done so. Each family has bought a few at a time, only when needed at once. This fact has a most important bearing on the quantity of potatoes left and their price. It means that these many city families must keep right on buying the rest of the year instead of having a stock in the cellar enough to carry them thru. It means that the record-breaking car lot shipments went into consumption instead of into storage.

Rot in Storage

The other big factor in cutting down the stock left on hand January first was rot in storage. (Continued on Page 15).



This Farm Belongs to Ezra S. Kline, Lancaster County, Pa. It has been in the hands of the Kline Family for almost one hundred years, having first come into the possession of William Kline; subsequently belonging to Hirom Kline. It has been in the hands of the present owner for 36 years. The farm consists of seventy-two acres of rich gravel soil.

Soils and Fertilizers

Conducted by Dr. J. G. Lipman

Our readers are invited to send us their problems on soils and fertilizers and they will be answered by Dr. Lipman in this column.

LIMESTONE AND ITS AGRICULTURAL USES

The last available figures for stone quarried in the United States are those for 1918. In that year the total output of limestone was 53,868,200 short tons, valued at approximately \$49,500,000. This represents about 79 per cent of the total quantity of stone and 60 per cent of the total value of the stone quarried in the United States. The quantity just given does not include some of the limestone used in the manufacture of Portland cement. With this included, the total consumption of limestone in 1918 was about 78,000,000 tons. In the preceding year the corresponding consumption was about 95,000,000 tons. Evidently, therefore, a considerable reduction took place between 1917 and 1918 in the output of limestone.

It is interesting to note that only a small portion of the total output of limestone is used for agricultural purposes. It appears that the largest quantity is used in the refining of metals; that is, it is used as a flux to the extent of nearly 27,000,000 tons a year. Nearly 20,000,000 tons were used in 1920 as crushed stone. Between 3,000,000 and 4,000,000 tons were used as building stone. As already noted, large quantities were used in the manufacture of Portland cement. Other uses included rubble, alkali works, sugar factories, glass works, paper mills, etc. The amount used in agriculture was only a little more than one million tons. It will be noted, therefore, that, in spite of the great importance of maintaining a proper supply of limestone in the soil, only a relatively slight proportion of the limestone produced in the United States is used for agricultural purposes. It is no less interesting to see how the use of limestone in agriculture is followed in the different states. The figures for 1918 show that Illinois was the largest user of limestone with nearly 210,000 tons. Pennsylvania with 131,000 tons and Michigan with 100,000 tons are next in order. However, much of the lime produced for agricultural purposes in Pennsylvania and Michigan is distributed in other states, notably New York and New Jersey. The production of limestone for agricultural purposes in New Jersey was somewhat less than 58,000 tons, and in New York somewhat more than 58,000 tons. Ohio, Tennessee and Indiana also produced large quantities for agricultural uses.

Much stimulus to the use of lime for soil improvement has been given both in Illinois and in Tennessee thru the efforts of the State Legislature to create a cheap source of supply. At one time farmers in Illinois could buy ground limestone at the state penitentiary at about 60c a ton. In Tennessee prison labor was similarly used to produce ground limestone for farmers at about 75c per ton. While the prices are now somewhat higher, they are, nevertheless, low enough to encourage the extensive purchase and use of lime for soil improvement. Another factor which tends to encourage the use of lime by farmers is the low freight rates which formerly prevailed in Illinois on agricultural lime. Conditions are at present less favorable for increasing the consumption of lime where it is most needed. In fact, the time has come for a propaganda on a national scale in behalf of the more consistent and systematic use of lime on the farm lands of the Atlantic Coast states and in the Middle West. Concerted action is needed for creating a sentiment toward a national policy dealing with the

lime problem. The following points are worthy of consideration:

1. A careful survey of the lime resources of the United States.
2. A careful survey of the lime requirements of the soils in the different regions of the United States.
3. The encouraging of the use of lime thru establishing practically nominal freight rates on agricultural lime.
4. The providing of storage facilities at freight stations whereby large quantities of agricultural lime may be accumulated to be taken away by farmers when it may seem most convenient to them. Farmers who have occasion to bring produce to town would then be given an opportunity to return with a load of agricultural lime.
5. Wherever practicable, limestone crushers should be installed and used by groups of farmers.
6. Encouragement should be given to the using of by-products containing lime, such as residues from acetylene gas plants, tanneries, soap works, crushed limestone for road purposes, the extraction of zinc and magnesia from their ores, etc.
7. Extensive deposits of lime marl and lime sand are available in many places. Plans should be devised for utilizing these to the benefit of agricultural production.

It is unfortunate that at present the manufacturers of lime products regard the agricultural uses of lime as incidental to more important uses. Many of the lime manufacturers are making lime

worms from lawns would be the use of sodium cyanide. One ounce of this material should be dissolved in eight gallons of water and applied to 25 square feet of surface. If 100 square feet of surface are to be treated, it would be necessary to use four ounces of sodium cyanide in 32 gallons of water. Still larger areas would require proportionately larger amounts. This treatment will destroy angle worms and white grubs, but will not injure the grass. It is to be remembered that sodium cyanide is very poisonous and should be handled with care.—J. G. L.

VALUE OF GREEN MANURE

Can you state approximately how much or how many pounds of nitrogen, phosphate and potash is turned under for every ton of some green manure crop such as alfalfa, clover, cow peas, soy beans, winter vetch, etc. I feel if the above were known it would save fertilizers. For instance, a man turns under a field of winter vetch or some other green manure crop for corn, wheat, potatoes, or a varied field of truck, he would not have to buy a fertilizer containing as much nitrogen. If a man knows how many pounds of the three elements the different crops require to produce a maximum yield he could turn under a certain green manure crop and apply enough commercial fertilizer to make up the deficiency in the three elements and also to overcome leaching.—Subscriber, New Jersey.

Subscriber—The crops to which you refer contain the amounts of plant-food per ton of green material given in the following table. The superiority of the legumes in adding nitrogen to the soil will be readily seen.

	Phos.		Pot-
	Nitrogen	Lbs.	Lbs.
Alfalfa	11.6	2.4	10.0
Red clover	10.8	2.4	13.3
Cowpeas	9.4	2.6	9.2
Soybeans	12.6	2.8	11.2
Winter vetch	7.2	2.0	9.0
Canada field peas	8.8	2.8	8.4
Crimson clover	9.4	2.4	7.8
Sweet clover	8.6	2.4	8.0
Velvet beans	11.0	2.8	11.4
Rape	7.0	2.4	12.4
Rye	6.4	3.4	12.0
Wheat	7.6	3.2	12.0

You will note that for the legumes a ton of green material will add to the soil approximately 10 pounds of nitrogen, 2 1/2 pounds of phosphoric acid and 10 pounds of potash.

In the case of non-legumes the analyses represent material plowed under early in the spring before much growth had been made. Naturally, young plants will contain a relatively higher proportion of nitrogen, phosphoric acid and

potash than is found in older plants. It should also be remembered that some of these crops have exceptionally well-developed root systems. This is particularly true of crimson clover and red clover. When the plants are young the material above ground may weigh less than the portion of the plant underground. Considering roots and tops together, these green crops when plowed under may add to the soil an equivalent of as much as eight tons of green matter. Ordinarily, the amount added under average conditions would be about four or five tons per acre. This would represent an addition to the soil of about 40 pounds of nitrogen and potash and 10 pounds of phosphoric acid. Under favorable conditions, leguminous green crops may add to the soil as much as 150 or even 200 lbs. of nitrogen per acre. Experiments carried on in New Jersey and Delaware show that crimson clover, when plowed under in April, frequently adds about 100 pounds of nitrogen per acre. Where green manure crops of this type are grown the need for purchased nitrogen in commercial fertilizer is reduced, particularly in view of the fact that nitrogen in green clover, cowpeas, soybeans, etc., becomes available rather quickly. Comparative tests made at the New Jersey Experiment Station thru a series of years show that the nitrogen in green clover or in other legume crops is as readily available as nitrate in tankage and fish.—J. G. L.

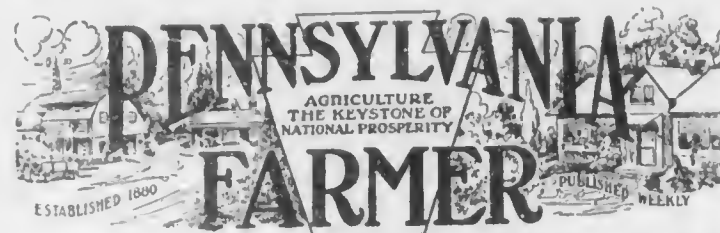
GETTING RID OF ANGLE WORMS

Can you give me some remedy to rid my lawn of angle worms (commonly called fishing worms) in the spring they kill the grass, no grass growing until about harvest. Any information you can give will be much appreciated.—F. C. C., Pennsylvania.

F. C. C., Pennsylvania—The best treatment thus far proposed for the elimination of angle



Third Annual Dinner, Co-Operat'v Growers' Association, Beverly, N. J.



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OUR JOB is to serve our readers. Whenever you are puzzled, write to us and we will help you if we can.
—The Editors

It is always easier to discuss the duties of others than to do our own.

Farm Loan Act Upheld

THE SUPREME COURT has settled the question of the constitutionality of the farm loan act and the provision which makes the bonds of the Farm Loan Banks tax-free by handing down a decision to that effect. The suit was brought by certain interests desiring to cripple or put out of business the Farm Loan Banks and was based upon the technicality of the tax-free provision. The Farm Loan Banks may now resume operations and consider the thousands of applications which have been accumulating but held in abeyance pending the decision of the Supreme Court.

The opposition to the F. L. Banks has mostly come from other banking and farm mortgage interests because of the lower rate of interest at which loans are made by Farm Loan Banks. It is altogether possible that an attempt will be made to have Congress amend the law so that the desirable features from the farmer's standpoint will be eliminated. Many city papers, laboring under a misapprehension of agricultural conditions, or from a desire to favor city interests have helped to create more or less popular opposition to the Farm Loan Act by making it appear that it is favoritism or class legislation. Farmers should keep a watchful eye upon the actions of Congress in relation to this matter and bring united pressure, if needful, to prevent the weakening of this popular and much needed loan system. The banking needs of farmers differ from those of every other class because the turn-over of capital is much slower and it is impossible to pay popular interest rates from one profit in one to three years, especially when the profit is so small on the average as it is in farming. When the consuming public comes to realize that favorable financial conditions for the maintenance and development of agriculture inure to the benefit of consumers as well as to farmers this foolish and harmful opposition to many of the farmers' measures will cease.

Farm Bureau Opposition

THE OPPOSITION of certain business interests to the development of the farm bureaus of the nation is becoming so pronounced as to merit the attention of all farmers interested in this movement. A perusal of our Washington Letter this week will show what is being attempted in Congress. The March 1 issue of "Industry," a publication devoted to spreading propaganda of certain kinds, mostly in the interest of "Big Business," altho this is not its professed object, contains a special feature intended to inspire fear

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concerning the work of the farm bureaus. The following is quoted from an editorial in the paper named and precedes the leader on the subject:

"The American Farm Bureau Federation, it will be seen, has some potentialities for good and undoubtedly some for evil. It has grown like a noxious weed which may in time choke the legitimate garden of agriculture. It was conceived under un-American policies, and has had the most amazing and rapid growth known in history. It is, moreover, or may become, a two-edged sword of which one edge will injure the general public and the other its creators and followers.

"The American Farm Bureau Federation was built up, primarily at least, on the money of the taxpayers of the country, yet it may become an autocracy entirely foreign to the Constitution of the United States. It actually has reached that point in its development where its remarkable growth, its undoubted influence, and its equally undoubted power may enable it to secure a strangle-hold on the bread and butter and the other necessities of our national life.

"The Federation was born less than one year ago. Today it claims a membership exceeding 1,500,000 farmers. The total annual income of the Federation and its locals is said to be more than \$15,000,000. It is represented in practically every State in the Union. Farmers everywhere, for reasons already set forth, are eagerly enrolling in its ranks. And within the past month this new force in American economics has launched a movement which may well prove of direct menace to the whole people.

"The menace in the situation is obvious. The country may view with tolerance the doubtful genesis of the American Farm Bureau Federation. It may show only a passive interest in this class grouping of a large part of the population. It may not, in view of the unfair burden resting upon the farmer, object to the Federation's growing political power, but if the Federation's Committee of Seventeen and its national sales agency attempt to carry out any plan to control thru a so-called holding company the grain of the nation, the issue must be met in behalf of ALL the people and not a class."

Farmers Victorious

BY A VOTE of 142 to 56 the House defeated the Edmonds Daylight Saving bill this week. This is another evidence of what can be done when public sentiment is crystallized and given expression. We doubt if ever there was a question upon which people were so united in opposition as was the case with the daylight-saving bill. This was very apparent at the hearing held last week in Harrisburg and in the thousands of protests and personal appeals sent to legislators. The overwhelming defeat of the measure was a surprise to city people because city papers did not know public sentiment, or if they did they purposely misinterpreted it by claiming that everybody except a few old-fashioned farmers favored the measure. Ridicule and misrepresentation will win out sometimes but it did not in this instance. Altho all the proponents of the bill argued against a local option bill allowing cities and communities to adopt daylight-saving if they so desire, it is altogether likely that the bill to this effect now in the House will be brought up for passage. Those who favor this bill will find no opposition from farmers. City people may set their own time for getting up, going to work and going to bed but country people will always object to making their long summer days longer.

Our Washington Letter

Simplicity and a lack of official pomp, military demonstration and extravagant ceremonies characterized the inauguration of President Harding, on March 4. An innovation in inauguration ceremonies was the use of the amplifier, a device by which the President's voice during the delivery of his inaugural address was amplified so that every person in the vast crowd assembled could hear distinctly every word of the address. It was a sympathetic crowd that greeted the incoming President. Every man and woman in it, it is safe to say, voiced the prevailing sentiment thruout the nation, that the new administration may be a successful one; that it may guide the nation thru these critical times to the higher ground of general prosperity.

Regarding President Harding's address Dr. T. C. Atkeson, Washington representative of the National Grange, says: "There was little in it that any one can object to. I do not believe that any man has gone to the President's chair that has had a closer view of the agricultural situation or a better understanding of the actual needs of the country people than President Harding. I believe he means to do everything that can be done for the best interests of the people and the nation."

Henry C. Wallace, of Iowa, the new Secretary

of Agriculture, is on trial, but it is Dr. Atkeson's opinion that there is little to risk in his appointment so far as making good. Mr. Wallace is farmer-minded, a graduate of an agricultural college, and has the right viewpoint. "Considering his judicial temperament, his thorough knowledge of agricultural problems and his special training in agricultural economics, I see no reason," says Dr. Atkeson, "why he will not make an ideal Secretary of Agriculture. I expect him to do so."

It is expected that the Sixty-seventh Congress will be called in extra session on or before April 4, when the immigration bill, packer control bill, emergency tariff bill, truth in fabric and other bills will be introduced. Congressman Burton L. French of Idaho, will introduce his honest fabric bill at the beginning of the coming session and will make active effort to secure its enactment.

A resolution aimed to put a curb on the American Farm Bureau Federation's grain marketing program was introduced in the last session of Congress on March 3, by Congressman Norman J. Gould, of New York. The resolution resolves that, whereas, the production and distribution of the nation's food supply is a matter of primary importance to every citizen of the United States; that any combination, contract or agreement to restrict the production of foodstuffs or to unduly enhance their price by combination, collusion, or other unlawful act would work a cruel hardship upon our people, and whereas declines in agricultural products have excited the fear and anxiety of our farming population and may cause them to be misled into the hasty adoption of plans or the formation of associations purported to provide a means of protection against loss, but actually discouraging production and arbitrarily establishing and sustaining the price thru means ultimately injurious to both producer and consumer, be it resolved that the committee on Agriculture of the House be instructed to make inquiry into the nature of actual and proposed agricultural organizations which are in whole or in part receiving appropriations, directly or indirectly, from the treasury of the United States, and whether or not such organizations, or their officers or agents, have proposed or are undertaking to establish, maintain, or control the price of food products thru associations, combinations, contracts, agreements, or otherwise. It is further resolved, that the committee on agriculture shall report its findings to the House, together with such recommendations as may be necessary to protect the public interest and provide unhampered food production, and further to recommend such congressional action or executive action as may remedy any existing condition if such be found requiring legislation, or the prosecution of any individual, organization, or corporation appearing to be engaged in the establishment or operation of unlawful combinations or conspiracies to restrict the production of foodstuffs or artificially enhance the price of the same.

In explanation of his resolution Congressman Gould has issued a statement in which he says: "Certain facts tending to show that an effort is being made by certain farm organizations to restrict the production of foodstuffs which were developed before the recent hearings of the Banking and Currency Committee of the House lead me to investigate the situation more fully. I find in a magazine published in this city a very comprehensive article concerning the activities of the American Farm Bureau Federation in this particular direction. Nothing could be more dangerous to the country than the arbitrary restriction by any organization of farmers of food production for the purpose of increasing prices. It is not merely economically unsound, but it is absolutely dangerous to the health, well being and prosperity of the country.

"There appears to be no doubt that the American Farm Bureau Federation is committed to such a policy. It appears that what is known as the Farmers' Grain Marketing Committee of Seventeen of the American Farm Bureau Federation, in session in Kansas City in February, recommended the adoption of a grain marketing plan and this committee of Seventeen actually intends that the members of the American Farm Bureau Federation shall control not merely the marketing of grain, live stock and dairy products, but shall control the amount of production. No committee and no organization should be in a position to control the grain crop of the United States.

"Such action by the American Farm Bureau Federation is particularly antagonistic, when it is known that the county agents of the Department of Agriculture are—and I quote the president of the American Farm Bureau Federation—the keystone of the federation. Mr. Howard insists that the county agent is the strong right arm of the American Farm Bureau Federation. This county agent receives one-half of his salary from the Department of Agriculture and the other half from the state agricultural college, being a combination state and federal officer, paid from the taxes received by the Federal government and state governments. If this county agent is to use his influence and power for the purpose of restricting the production of foodstuffs, I believe that these county agents should immediately be detached from the Federal payroll."

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Congressman Gould objects to the "attempted dictation to Congress by the American Farm Bureau Federation in the matter of legislation," "Heretofore," he says, "such dictation has invariably been attempted by the American Federation of Labor, but now we find this American Farm Bureau Federation attempting the same tactics, and this American Farm Bureau Federation, it must be remembered, has as its nucleus county agents paid out of Federal funds and out of Federal taxes. Nothing will produce discontent, unrest, and even Bolshevism quicker than an attempt to limit the food production of the United States, boost the prices and compel the people to pay double what they ought to pay for their food. I shall insist upon this investigation in the next Congress, and I shall continue to act until this conspiracy against the people is ended. We can at least divorce those who inspired this conspiracy from the public payroll."

Commenting upon Congressman Gould's resolution and statement, Gray Silver, Washington representative of the American Farm Bureau Federation, says:

"All congressional investigation of farm organizations conducted in a fair-minded way and with a view to securing all the facts, will be welcomed by the American Farm Bureau Federation, and every effort made to assist in any way possible. The American Farm Bureau Federation has no secrets and operates entirely in the open. It is built upon the voluntary membership support of a million and a half forward-looking farmers who are endeavoring to improve agricultural conditions and increase production thru co-operation and co-ordination of efforts along lines consistent with permanent production. This is a privilege and a right open to every citizen of the United States and further investigation of the federation can only serve to convince larger numbers of its solid basis and its sincerity and integrity of purpose. Neither the federation nor the committee of seventeen has adopted any policy of limiting production or fixing prices.

"All who are well informed and intimately acquainted with the organization and functions of the local county farm bureau units, fully understand the relationship of the county agricultural agent to the farm bureau. They know that the farm bureau is the only organization which universally supports and makes effective the work of the county agent in his endeavors to increase production. They know that the duties of the county agent are entirely separate and distinct from those of the farm bureau officers. And finally they know that instead of using government funds to support the farm bureau the farm bureau contributes heavily to the county agent's financial support, and uses its own funds in carrying out educational demonstrations. Any attempt on the part of Congress to interfere with the legitimate functioning of the county agricultural agent would react to the detriment of both the consumers and the producers."

—E. E. Reynolds.

HARRISBURG LETTER

The Constitutional Convention.—While one can get almost any kind of a prediction about legislation on Capitol Hill these days there appears to be a growing impression that the bill for a constitutional convention vote will be passed. Opposition to the partisan proposition has not moved the state administration and as men inclined to criticize its financial policy are disposed to go along on the constitutional bill it may become a law before long.

Educational Bills In.—The state's educational bills are in hand. The last came in today and it is now up to the Legislature to provide the money, it being taken for granted the Finnegan schedule will pass. However, there is some stir over the length of term bills and various others which have been much discussed. The latest estimate is that the educational end of the government would like to add \$10,000,000 to what it got last year. It may get \$6,000,000.

New Dog License Plan.—A new scheme for dog licenses which would take issuance of licenses off the shoulders of county authorities and make licensure of canines a state affair, just like the hunters' license system, has been evolved. County treasurers would issue the licenses and get a dime for each sold, the rest of the money going to the state. Commissioners in many counties are not opposed to this plan as it would rid them of the trouble of enforcement and pass it on to the state which could finance the prosecution of people refusing to license dogs out of the proceeds.

Agricultural Bills In.—The bulk of the agricultural bills are in hand. The State Fair bill came in Monday and owners of small fairs and large ones are preparing to fight it; the bill for assessors to make reports on acreage and crops is in hand as well as bills stiffening penalties for the violation of quarantines or horticultural or potato wart violations are under way. The bill to permit payment of men and teams for tearing out weeds at the prevailing market rates has been favorably reported.

Pure Seed Bill.—The pure seed bill, which

makes a new standard for seeds in the state and is designed to increase the penalties for the sale of seeds not reasonably clean is to be pushed by the state administration. Considerable time has been spent on this measure and it is believed it can be made to pay the farmers of the state within a year or so. The present seed law has been taken as a base and experience of the last few years has furnished ideas for changes.

The Milk Hearing.—Probably one of the most important hearings held in a long time was that on the Cook milk bill, designed to prevent adulteration. People engaged in the condensed milk and similar lines brought experts here and the whole subject of milk was discussed for hours.

Bee Bill Reported.—The bill regulating the shipment and other matters connected with bee culture has been favorably reported to the House and is expected to pass. The bill is declared by state experts to be essential if the growing industry is to be properly protected from diseases.

Bids Asked on Roads.—Bids on 100 miles of road will be asked by the State Highway Department immediately. Most of the contracts are work on which the state rejected bids last month, offering a very interesting study whether contractors who have criticised the department action in demanding lower bids will go after the work or not.

Helping Wool Growers.—Plans are being made for the state to give some expert aid in handling the wool crop. A considerable quantity of the wool is being held in storage, but the state has been listing local buyers and means to get the crop moving are being studied.

NEW YORK LETTER

Voice of Communities.—The New York State College publishes a bulletin on the country week-

Effects of a State Fair

THE OPPONENTS of a State Fair for Pennsylvania, the officials of certain county fairs, have contended that a State Fair would tend to detract from the value and success of county fairs. While all who have any knowledge of the matter know this to be a groundless fear, yet the publication of the following extract from a letter written by the secretary of a big county fair in Ohio where they also have a magnificent state fair may help to reassure the minds of the fearful:

"Our fair grounds are 30 miles from the Ohio State Fair grounds, and I consider the State Fair more of a help than a detriment to our fair, as I think it gives fair-life to the people and thereby helps all county fairs."

(Signed) W. T. MCLENNAGHAN,
Secretary Fairfield County
Agricultural Association.

lies, saying they cannot well be dispensed with. There are 439 newspapers published in 375 villages not having a daily paper. This is a four per cent decrease from the number in 1915. These papers speak for the communities in an increasingly efficient way, since the college began its service to the weeklies. The need of more farm news is stressed by the college, which also teaches the best make ups for the various pages.

Farm Bureau's Tenth Birthday.—On March 20 President John Howard of the American Farm Bureau Federation will assist in celebrating the tenth birthday anniversary of the Farm Bureau. The first one was established in Binghamton 10 years ago, with J. F. Barron, now of the State College in charge. Over six counties were served by the first Bureau.

Care of Herds.—Dr. U. A. Moore, of the State Veterinary College, urges herd owners who have just given the tuberculosis test to secure the bulletin just issued by the college advising as to after care of such herds. Testing for TB is being pushed very rapidly in a number of counties. Milk Dealers Convicted.—Eleven milk dealers of Brooklyn have been convicted of selling milk and cream adulterated with coconut oil. They paid \$4850 in fines.

Teasel Contracts.—Onondaga county teasel growers have contracted to sell 30 acres of teasels in 1921 and 67 acres in 1922. Teasels produce about 1000 pounds to the acre, and bring about 35 cents a pound.

Must Carry Over Hay.—The state led in hay production this year. Recent estimates show that 60 per cent of the commercial crop must be carried over into next year for lack of demand. Freight rates are now so high as to discourage shipping amounting to about one-half the selling price. Freight, baling costs and commission are

said to total about \$14 a ton if sold in leading markets. Rapid deflation in the West filled eastern markets with cheap hay before the eastern crop was sold and New York growers see no hope for next year's prices unless it proves a very short crop.

Ash Timber Valuable.—Several counties of New York are furnishing ash that weighs more in proportion to bulk than any other ash in the world. Twenty-five carloads are leaving Cortland County \$60 a thousand feet in the log. It is cut into 38-inch bolts, and used for making baseball bats. A shipload of bats was recently sent to Australia, made of this heavy timber. The growing of ash trees should be encouraged and all young trees cherished.

Basket Willow Crop.—Farmers of Gates and Chili are cutting their season's green willow crop at \$38 to \$45 a ton. Three tons to the acre is a good yield, and the crop is grown on swamp land.

Prize Garden.—Kenneth Cook of Dunkirk has been awarded first prize of \$25 for the best garden project in New York state. He produced \$932.50 worth of garden products on 1½ acres of land at a cost of \$639.

Profit in Purebreds.—Ormsby Sensation, a purebred Holstein bull has been sold for \$20,000, to Beaver Dam Farms. Eighteen months ago he sold for \$4000.

NEW JERSEY NEWS

There is a strong belief here that sine die adjournment of the 1921 session of the New Jersey Legislature will take place about Thursday of the week beginning March 23. No action has been taken by the Senate in the way of voting on the Eldridge Daylight Saving bill, and the fact that in New York, Governor Miller has signed the repealer to the daylight saving proposition, may have quite some bearing on what the members of the Upper House may do on the bill. Indications point to Governor Edwards vetoing the Case State Constabulary measure, which has passed both the House and Senate, but it will most likely be passed over his signature of disapproval much to the satisfaction of the farmers of the state. While there has been much opposition to this measure on the part of residents of the populous centers on the ground that the cities would have to bear as much of a tax burden as the people in the rural sections in supporting this police force, the strength that was thrown to the proposition by the agriculturists had the effect to a large extent to it being acted upon in a favorable manner by the lawmakers.

In the long list of bills that was passed within the last week in the House were the following: authorizing the establishment by the Fish and Game Commission of a game reserve in Warren and Sussex counties, both of which are rich in farmlands; permitting boards of freeholders to offer a reward of \$5000 for the arrest of a person guilty of murder, burglary, robbery, etc.; controlling interest rate on property sold for taxes; prohibiting state or county officials from serving on juries; providing a uniform method of procedure for the making of applications for state aid in the construction of township roads; providing for temporary financing by fourth class counties; providing that lists of jurors and copies of indictments be furnished defendants in certain cases; authorizing the State Commissioner of Education to name a county medical examiner; fixing the season for the killing of deer from December 15 to 20 which reduces the period five days; authorizing recorders and mayors try cases for violation of the fish and game laws; requiring that a detour road be placed in proper condition when another road is closed temporarily; regulating killing of foxes; forbidding aviators from flying over spectators at county fairs and similar outdoor exhibitions at a less altitude than 2,000 feet. Among the bills recently passed by the Senate were: providing for women on grand and petit juries; providing for women on juries in small cause courts; providing for women on district court juries. Governor Edwards has sent to the Senate for confirmation as full term members of the New Jersey State Highway Commission the names of Colonel A. S. L. Doughty, who is very well known among the farmers in Burlington County from which section he hails, and that of George L. Burton, of Middlesex County. No action has been taken on the appointments so far. Burton has been the chairman of the commission for some time. He is a Democrat while Doughty is a Republican.

Farm Stocks Greater.—Despite the fact that the farmers in this state have shipped more grain than usual during the past year the stocks on hand on March 1 with the exception of wheat were greater than the average for the past ten years. This is said to be due to the unusually large crops of last year.

Cash Rents Reported.—The following are the average cash rents paid by farmers in New Jersey, as reported from several hundred correspondents from thruout the state: average cash rent paid for typical rented farm, \$570; average value of such farm, \$8,800; average size of farm, 88 acres; average cash rent paid for plow fields per acre, \$8; average value per acre of such fields, \$93. It is said that comparatively few farms are rented for cash in New Jersey, the general plan being a share basis.

James Carriers Make Cleaning Easy

HOW do you do your chores—the old way or the James Way? The old way—cleaning out the barn is the dirtiest and hardest work on the place, a chore that is shirked by every one who has a chance to get away from it.


But this task, like many other tasks in the dairy barn, has been changed by James to a chore that even the boys like, and which they can do as well as the strongest man.

A 320-page book tells all about the James carriers and other work-saving James devices such as James cow stalls and stanchions, steel pens, ventilators, drinking cups, bull staffs, and it also tells about the James Barn Plan Service.

James Mfg. Co.

Elmira, New York

The book is sent free, if you ask for James Way book No. 26




Ventilation of the Dairy Barn

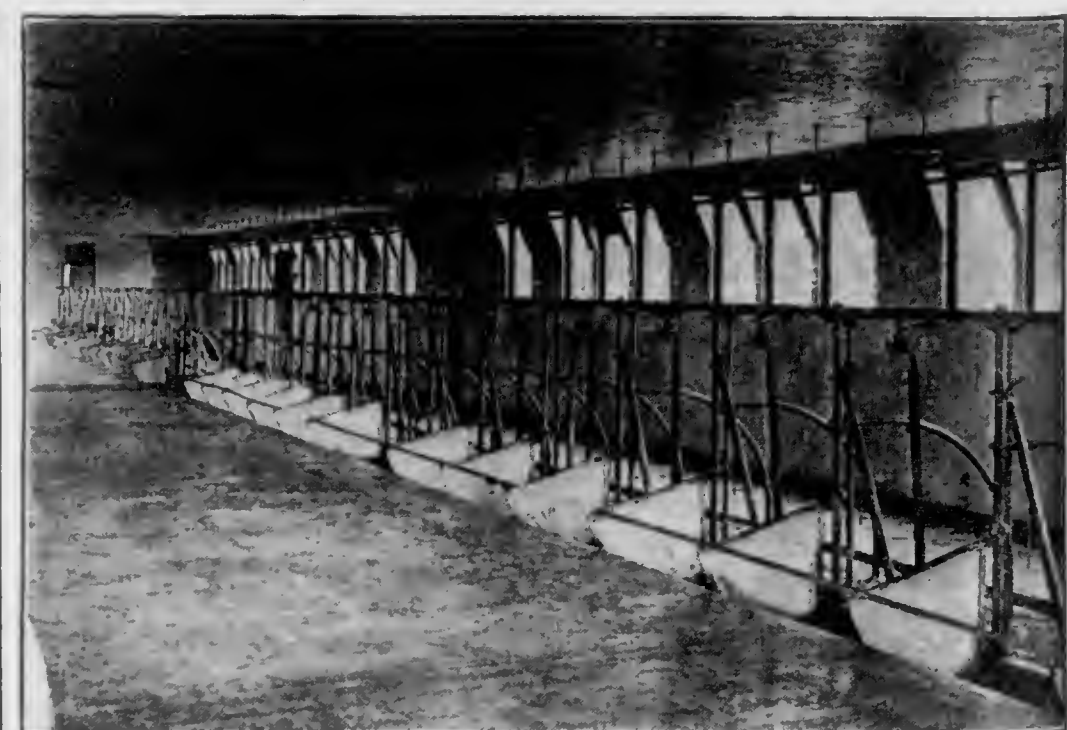
By A. L. BEAM

USUALLY during the winter season some trouble is experienced in properly ventilating the dairy barn. That is, supplying sufficient pure fresh air and allowing the moist foul air to escape without making the barn too cold or causing drafts on any of the animals. Certain indications definitely point to a good or poor system of ventilation which are noticeable as soon as one enters a barn. In some cases the walls and ceilings of a barn are covered with moisture and the air has a penetrating chilliness which is not found in other barns in which the warm moisture laden air is systematically disposed of thru outlet flues.

Why do we usually associate ill-health and disease with tenement dwellers in large cities? Why do those who work indoors lack the health and vigor of those, most of whose time is spent in the open? Why do you get drowsy in a warm poorly ventilated room? The answer to these questions is an inadequate supply of pure fresh air or rather

per hour. This air, after being breathed contains nearly five per cent water which, in twenty hours amounts to nearly one and a half gallons per cow. Multiply this amount by the number of cows in your barn and you can readily see that, if a large part of this moisture is permitted to condense in the barn it will soon cause rust and decay, thus materially shortening the life of the equipment and building.

A cow and the food she consumes may be likened to a stove and the fuel it burns. Close the drafts on a stove and the fire burns more slowly and finally is extinguished. Close all the fresh air inlets in a barn and the cows slacken up in production and if it were possible to absolutely close all inlets of pure air the cows would soon die. In both cases an abundant supply of oxygen as found in fresh air is necessary to convert fuel or food into heat or energy. Oxygen not only controls the rate but also the efficiency of converting food into heat and ener-



A Well Ventilated and Well Lighted Barn

gy. It is estimated that a cow needs an amount of pure air equal to twice the weight of her daily ration.

It is usually desirable to have the square surface of the intake flues slightly larger than that of the outlets. One square foot for every five or six cows should give a sufficient supply of fresh air. King's method of calculating the size of the flues will be of assistance under average conditions.

It is true that cows must be comfortable to give their maximum production and that the barn is kept comfortable only by the heat given off from their bodies, so that a sufficient number of animals should be kept in the barn to keep the temperature from falling below the freezing point and still permit the entrance of fresh air and the escape of foul air. When it is necessary to keep only a few head of cattle in a large barn it is desirable to partition off the unused section in real cold weather if at all possible.

Suppose for a moment we ignore the health of the animals and consider the effect of poor ventilation upon the life of the barn itself. A cow requires about sixty cubic feet of air per minute or 3600 cubic feet

59 x 25—1475 number of cubic feet of air for each animal.

1475—4.91 number of square feet in outtake flues.

300 (rate of flow)

If two outtake flues are used, they must each contain 2.45 square feet or 253 square inches.

MILK SITUATION IN NEW YORK

The sale of milk of Dairymen's League members for March started in on a much more lively basis than has been the case during winter months due to the improvement in general market conditions, notably the buying of milk in less limited quantities by manufacturers. Several large manufacturing companies again opened their plants in late February and early March, buying milk at the league price of \$2.10 a 100 pounds for 3 per cent milk, this price being the base figure in the 200 to 210-mile zone from New York city. The same variation of 4 cents per 100 pounds for each tenth per cent variation in butterfat content remained in force. The special contract markets in New York state, of Syracuse, Rochester, Buffalo and several smaller markets followed their same system of purchase with Dairymen's League members, the March price being adjusted to correspond with the \$2.10 base figure.

This situation is indeed encouraging to dairymen and their friends who have suffered many thousands of dollars in loss due to the curbed outlet since last fall when large milk manufacturing concerns refused to buy the farmers' milk. The brighter outlook has also come about in the face of extensive and expensive propaganda by milk companies in the winter months, which purposed to destroy the confidence of members in the Dairymen's League and to bring about the situation which existed prior to the war when the milk dealers bossed the situation.

Pooling Plan Progressing

The momentum of the pooling plan has so increased the promise for early operation for the Dairymen's League Co-operative Association in the pooling of milk proceeds that the promise in early March was for sale of milk under the pooling plan in April. At the close of the first week in March nearly 43,000 individual contracts had been signed and received by the home office of the League. It will be noticed that the base price of \$2.10 per 100 pounds is 48 cents or approximately 1 cent a quart lower than for February.

For approximately two years now the Dairymen's League has been selling its milk on the basis of 4 cents per 100 pounds variation for each tenth per cent increase in butterfat content. Previous to this time the variation of one point in butterfat was valued at 3 cents. There has been agitation from time to time to increase this sliding scale as the butterfat content increased. Some dairymen have claimed that the figure might well be four cents for each tenth per cent variation in butterfat between 3 and 4 per cent total content, and that 5 cents for each tenth per cent increase would be a fair figure between 4 and 5 per cent total butterfat content. Certainly under existing conditions and in view of the fact that above certain limits the cost of producing high butterfat milk is not proportional, the point may be well taken.

It is interesting to note that during February the lowest average price paid to farmers anywhere in the country was \$2.59 per 100 lbs. for average 3.5 per cent milk in the eastern north central states, which comprises Ohio, Indiana, Illinois, Michigan and Wisconsin. The south Atlantic farmers received the highest price of \$3.91 during the month, which includes the states from Delaware to Florida.—H. T. B.

The same factors which have made the De Laval Separator famous are back of the DE LAVAL MILKER

Just as the De Laval Cream Separator established new and higher standards of efficiency and construction, so is the De Laval Milker establishing higher standards among milkers. It is strong; durable; simple in construction and operation; easy to keep clean; saves time, and increases production.

The same policies which have made the De Laval Cream Separator the most popular and most widely used in the world are back of the De Laval Milker and are responsible for its rapidly increasing use.

Long ago the De Laval Company recognized the need for a mechanical means of milking, to place the dairy business on a machine basis. For over twenty years experiments have been conducted, and after many years of research, test and use, and not until the De Laval Company was absolutely sure its milker was actually a better way of milking, was it offered for sale. Now after four years of commercial use, in all sections of the country, owners are proving that it not only saves time and eliminates the drudgery of milking, but it actually increases the flow of milk even over good hand milking.

Service also helped make the De Laval Separator famous; and it is service back of the De Laval Milker that is helping

to create preference for it among dairymen. This means that the De Laval Milker will be properly installed, that you will be thoroughly instructed in its care and operation, and that the De Laval Company's interest in you, instead of ending there, just begins.

The De Laval Separator has rendered a service of inestimable value to the dairy industry—the De Laval Milker is doing the same. It removes the one great drawback to dairying—hand milking. American farmers realize the service, stability and integrity back of the name "De Laval," all of which is reflected in the rapidly increasing use of De Laval Milkers.

Write for full information concerning the De Laval Milker

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SAN FRANCISCO, 61 Beale Street



Sooner or later you will use a De Laval Milker or Cream Separator

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Tires, lamps, equipment and repairs at their usual prices. \$4.00 NO MONEY. Write for free literature. Ask for new prices, conversion offers and terms. Ask for new agent.

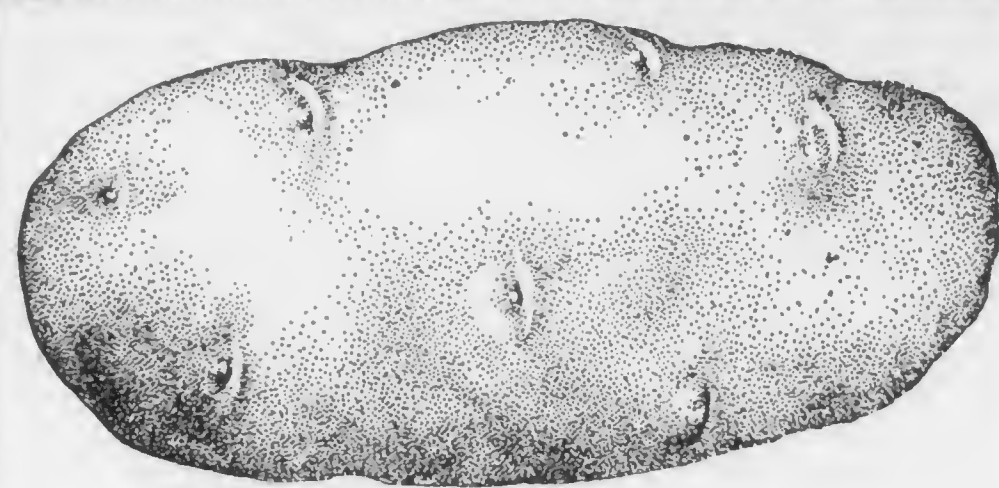
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"even when there is no fungus"

Pyrox

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THE proper use of Dempwolf's Fertilizers will pay you better in crop returns than the work of "all the King's horses and all the King's men." No amount of work will make up for lack of fertility in your soil.

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It is good farming judgment to see that your crops are fed as well as cultivated. Both are necessary to give you the best returns for your labor.

For 50 years we have been furnishing Dempwolf's Fertilizers to many of the most successful farmers of this section. Year after year, they have profited by our experience, as we have also profited by theirs. We have come to know fertilizer as you know your farm, and all that we know about making good crops by making good fertilizer is at the service of our customers.

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at prices you like to pay
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For Sale—Frost Proof Cabbage Plants
Early Jersey Wakefield, Charleston Wakefield, Succession and 7th March, at \$1.50 per 1000 express collect. Parcel post paid, 100 at 35c; 500 at \$1.50; 1000 for \$2.25.
C. J. & C. WHALEY, MARTIN'S POINT P. O., S. C.

Dairy Problems

Note—The answers to the following queries on matters of interest to dairymen were prepared by Professor A. A. Borland, head of the Department of Dairy Husbandry at the Pennsylvania State College.

THE RIGHT SIZE OF SILO

I have a 14x30 ft. silo and I want to keep about ten cows to be fed 250 days almost exclusively on silage, using some cottonseed meal, shredded fodder and plenty of rye straw. Will ten cows fed twice per day eat off sufficient silage to keep it from drying or will it be necessary to take down the silo, build new foundation, cut the hoops and take out sufficient staves to make the diameter 10 or 12 feet? These cows are kept for milk for the family, milk for pigs and chickens and calves and to make some wholesome "land improver." I don't expect a maximum yield and will not feed for it. Would it be better to keep four cows on heavy grain feed with hay and buy more fertilizer? We have plenty of land and a 20-acre pasture. Did I correctly interpret an article in Pennsylvania Farmer from State College from which I concluded that for silage one should use sorghum and soy beans since sorghum out-yields corn? Compare the grain value of corn with that of sorghum for silage. Our land has been in blue grass pasture for five years and therefore is free of weeds. Shall I

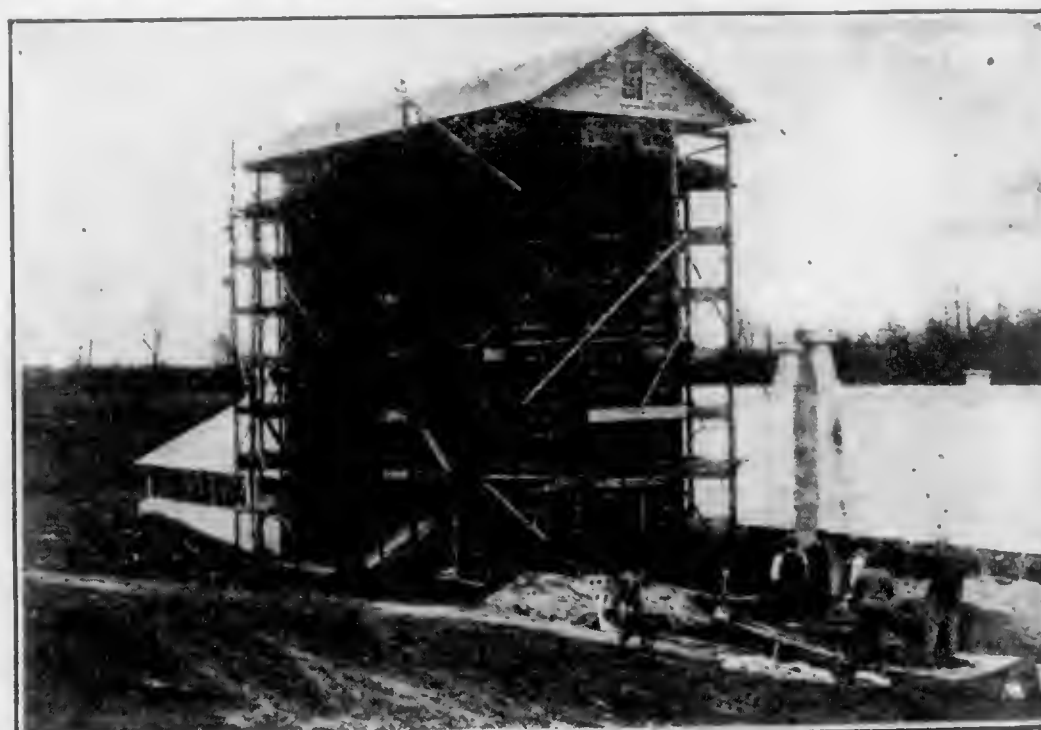
valuable pound for pound for feeding purposes as sorghum silage. Since soy beans may also be planted with corn as readily as with sorghum, it would appear that for Pennsylvania, corn would be preferable to sorghum for silage purposes.

Since your land is free from weeds, it will make little difference whether you hill or drill corn for silage. From the standpoint of convenience, especially if soy beans are planted with the corn, the drilling would perhaps be preferable for your condition.—A. A. B.

AN EFFICIENT DAIRY RATION

I have a cow which has been getting about twelve pounds of a grain mixture composed of 300 lbs. corn and cob meal, 300 lbs. bran and 100 lbs. oil meal besides all the mixed hay and corn fodder she will eat. Will you please tell me how I can improve this feed. The cow gave about 16 quarts of milk per day when first fresh but soon failed and is now giving about 8 quarts per day. She freshened in November. Some people say she has the wolf in the tail while others tell me this is a mistaken idea. I gave her a mixture of the following: aux vomica, sulphate of iron and ground gentian, but it didn't seem to do any good. Will you please tell me what is wrong with the cow and what I can do for her.—J. R. M., Montgomery Co., Pa.

J. R. M.—So far as "wolf in the



Building Silos at Greystone Jersey Farm, West Chester, Pa.

hill or drill my silage corn?—F. M. G., Sussex Co., Del.

F. M. G.—It is necessary to lower the surface of the silage about two inches daily in order to keep it from spoiling. In order to do this with a silo 14 feet in diameter, a herd of about 25 cows would be necessary when the cows are fed at the rate of 40 pounds of silage each per day. Hence your present silo is impractical for a herd of ten cows. It would be advisable to do as you suggest and narrow the diameter of the silo to 10 feet. The ideal plan would be to have two silos each about 8 feet in diameter. This would insure that the silage would be fed down rapidly enough to prevent spoiling.

There would be ample silo capacity in this way to enable you to feed silage 250 days if the surface were lowered 2 inches daily.

It will be better to keep ten cows with moderate feeding rather than four on heavy grain feeding from the standpoint of maintaining the fertility of your farm.

Well matured corn silage contains 1.1 pounds protein, 15 pounds carbohydrates and 0.7 pounds of fat per hundred pounds, while sorghum silage contains but .6 pounds of protein, 11.6 pounds of carbohydrates, 0.5 pounds of fat. It will therefore be evident that well matured corn silage is approximately 1 1/2 times as

tail" is concerned there is no such thing. This cow evidently does not get enough protein in her feed. If you were to modify your present grain mixture so that it would be composed of 100 pounds of corn and cob meal, 100 lbs. of wheat bran, 150 lbs. of linseed oil meal and 150 lbs. of cottonseed meal, you would have a grain mixture which when fed with mixed hay and corn stover would be much more efficient as a milk producer. The cow should have approximately one pound of grain mixture for every 31 pounds of milk she produces.—A. A. B.

FEEDING DAIRY CALVES

When calves are fed for veal their life story is soon complete and while errors in feeding may cut down the veal check they do not have a lasting effect on the income. But when calves are to be retained for a dairy business it is important to give them the best of care as such animals are apt to be a factor in the farm income for many years to come. Properly fed calves should grow into heifers with vigor and stamina and later become cows capable of producing a profitable amount of milk and more vigorous calves. The weaning has no place in the dairy business and the early feeding of the calf helps to make a good cow.

Making Farm Power History

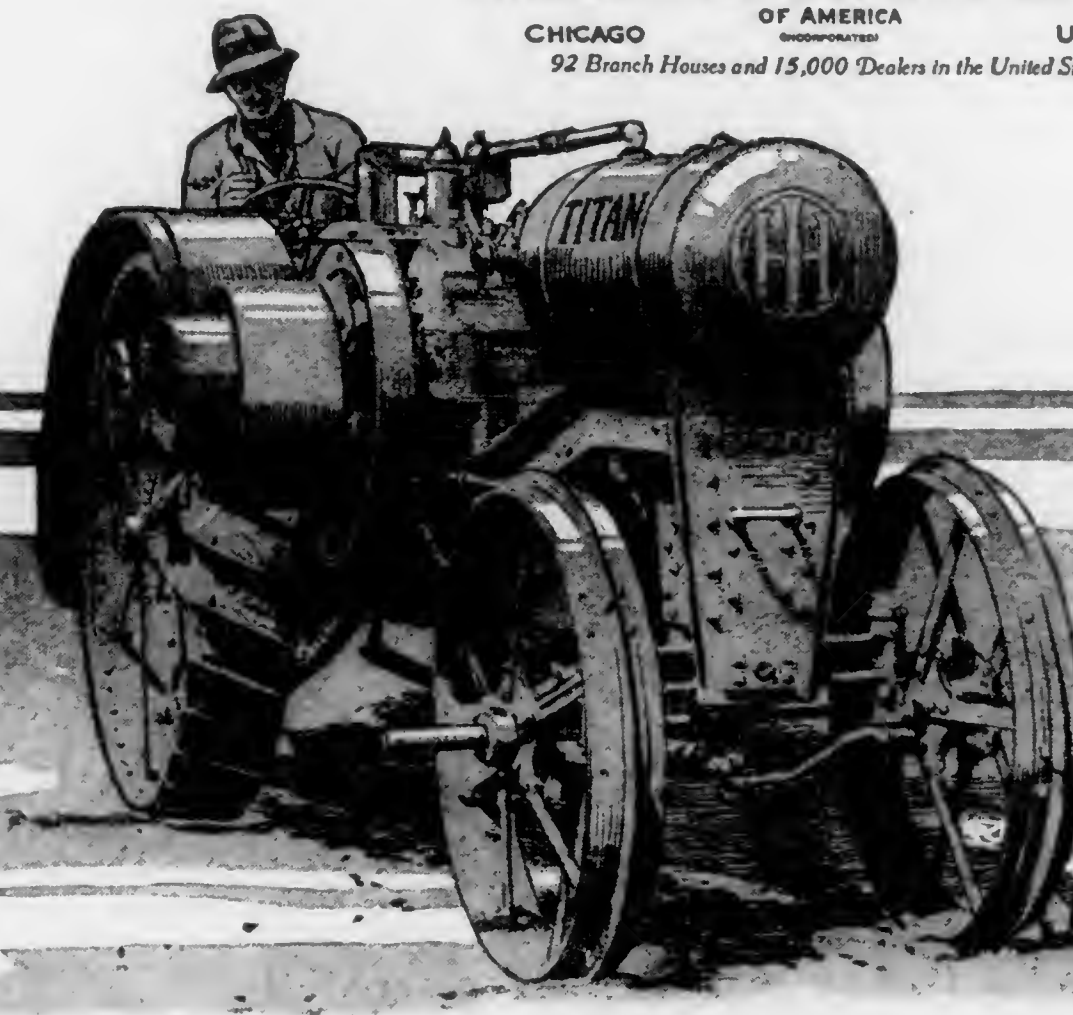
SINCE the first Titan went out to the fields five years ago, the farming world has invested over seventy million dollars in Titan tractors. This is a record approached by no other 3-plow tractor. During those years of power history, countless experiments have risen and fallen, but Titan has advanced on a basis of practical design and workmanship to a success acknowledged the world around.

Entering into 1921, this Company has effected arrangements which include provision for time

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Soy beans, early and late varieties. No. 1 stocks. Prices on request.

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Franklin, Virginia

Frost Proof Cabbage Plants

Early maturing Cabbage Plants of best varieties. Make cabbage about two weeks earlier than your hot house plants. Early Jersey, Charleston Wakefield and Succession. \$1.50 per 1,000; \$2.00 for 2,000; 10,000 for \$13.50; 20,000 for \$25.00—by express. Add \$1.00 per thousand to above prices if you want them by parcel post prepaid.

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200 PROGRESSIVE pedicured ever-bearing strawberry plants, \$1.50 postpaid. 1000 \$5.00 not prepaid. **MAISON NURSERY CO.**, PIEDMONT, MO.

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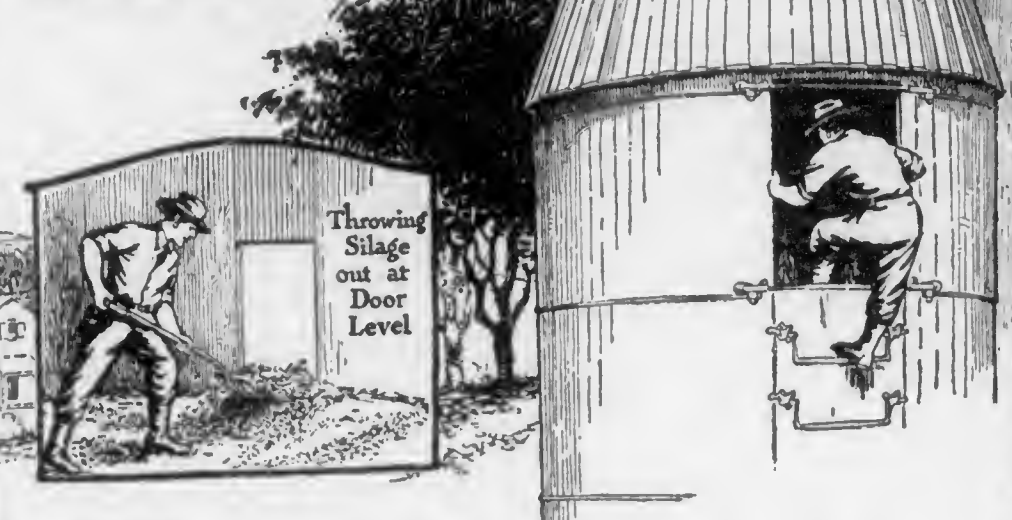
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This powerful disinfectant positively destroys all seed grain smuts and growth, and prevents flax wilt, also scab and black-leg of potatoes. Ridestables, kennels, chicken houses of disease germs and flies. Endorsed by the U. S. Dept. of Agriculture. The best Formaldehyde bears the Perth Amboy Chemical Works' Label—at your dealer, with complete directions. Farmers' Hand Book FREE on request.

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Grown in the warm, sandy soil of Maryland's famous "Eastern Shore." You get the small shro plants. They will "take" quickly in their new home. Our prices are reasonable. "You can pay more but you can't buy better." Free catalogue. Write today.

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Field selected, rack dried, high germination. Improved Champion Yellow Dent Seed CORN. Increase your yield by planting this highest and best yielding of all corn. \$2.50 per bushel.

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NEW PRESIDENT OF STATE COLLEGE

In Dr. John Martin Thomas, the president-elect of the Pennsylvania State College, the institution is remarkably fortunate in obtaining a leader with a brilliant and diversified record, not only in educational affairs but in business and many phases of endeavor that have stamped him as one of the most popular and well-known educators in New England. President of Middlebury (Vt.) College since 1908, he has increased the student enrollment from 200 to 447 and the college endowment by more than a million dollars.

Dr. Thomas was born in Ft. Covington, a country town in New York, fifty years ago, and is the son of a minister. His early life has acquainted him with the feelings and desires of rural people, and he has always been greatly interested in agriculture and in the life and work of the farmer. His wonderful ability to adapt himself to any and all



DR. JOHN MARTIN THOMAS

Recently Elected President of the Pennsylvania State College

circumstances in which he is placed, causes his coming administration at the State College with its School of Agriculture to be looked forward to with assurances of success by all who have dealings with him.

Prior to becoming president of Middlebury College, Dr. Thomas was for twelve years pastor of the leading Presbyterian Church at East Orange, N. J. He is a graduate of Middlebury and the Union Theological Seminary, and studied abroad. He was chairman of the Vermont State Board of Education from 1910 to 1914, and as an appreciation of his popularity in Vermont, was sent as a delegate to the last Republican National Convention in Chicago. He expects to assume his duties at Penn State about April 15, or as soon thereafter as he can be released at Middlebury.

Dr. Thomas takes the place of Dr. Edwin E. Sparks who was forced to resign by ill health.

NEXT WEEK'S FARM WORK

Our harness will get one grand fixing up during the next period of bad weather. We don't follow the prescribed rules but just go at it early in the morning and keep at it hard all day. While in the village Saturday night I bought some castle soap, a gallon of neatsfoot harness oil; two pounds of copper rivets, an awl, wax and thread, needles and a harness punch. We have on hand an assortment of snaps, buckles, hame straps and several "trace sta-

pies" (you know what I mean; the irons that wear out where the traces connect onto the hames).

Before we begin working on the harness the frost-proof packing house will be cleaned out especially at the end nearest the stove and work bench. Ropes and poles will be suspended horizontally about six feet high. All the harness will be hung on these supports. It will be quickly rubbed with a coarse piece of burlap to remove the dust and dirt. Then it will be washed quickly with hot water and castile soap. This material takes the sweat out of the harness. While the work is going on the stove is kept hot. The men work faster and the harness dries up more rapidly. Before we get thru cleaning and washing, part of clean harness will be dry enough to soak with the harness oil. Oh sure, I know some people wouldn't think of cleaning up a harness until they had taken every buckle apart. That's too much work for us. Furthermore, we don't try to rub in the oil; we just rub it on thoroughly and generously, it soaks in itself. After the harness is cleaned and oiled, it is carefully examined and repaired. Here is something more you don't often see in print. You must realize that sewing harness is the prescribed method but we do very little sewing except on the lines. Riveting is much easier and quicker for a farmer than hand sewing.

We have three sets of double harness, two sets of heavy one-horse harness and half a dozen "hames and traces" for cultivating. During the busy season every Tom, Dick and Harry uses the horses. They may know little or nothing about harnessing a horse, therefore, when you understand the circumstances, you may not be alarmed when I tell you that we have found it advisable to rivet the hame straps, breast straps, breeching straps, girths, etc., so that the harness cannot be pulled apart. The trace chains must be fastened inseparably to the traces. Otherwise, the hame straps are pulled out for a hundred miscellaneous purposes; some fellow gets plowing in the back field and lays the breast straps down. Good-by breast straps! Breeching straps can be smuggled into service to hold up some hobo's breeches. Just so it goes; you may not agree with me but try my scheme on your old set of harness. Besides the regular harness and bridles, it must be remembered that the halters and collars especially need careful attention. After everything is repaired and adjusted, the entire thing gets another generous application of the harness oil. Then we gather up the tools and equipment so that we will have it when needed again.

—R. W. DeBaun.

A BIG TREE

I saw a short article in your paper relating to big trees. There is a red oak a few rods from our home which is 22 feet in circumference, 13 inches from the ground; 100 feet high and 70 feet spread of branches. The first limb is broken down and is 2 feet in diameter at largest measurement and more than 50 feet in length.

This is a line tree where W. L. Seigworth Graham heirs and Brishba Farms corner or extend, and one and a half miles from West Freedom, Clarion Co., Pa.—J. N. Brishba, Parkers Landing, Pa.

Kill the rats, and save money.

STUDYING THE POTATO MARKET

(Continued from Page Two).

age caused by the late blight and rot disease epidemic last summer and fall in potato fields. From New Brunswick thru to Pennsylvania the losses by rot found at digging time were very heavy, and the potatoes put into storage continued to rot in most cases.

Results of Other Rot Years

Next to the reports of the two bureaus of Crop Estimates and of Markets, a third and fourth class of scientists can throw light on the potato growers' problems. I refer to the plant doctors, as a farmer would say, though they prefer to call themselves plant pathologists, and to the teachers of farm management at our agricultural colleges. The plant doctors keep every year records of every plant disease as they find it in each state. These are got together in the Bureau of Plant Industry, Washington. From these records we find that the worst late blight and rot epidemics of the twenty years before 1920 were those of 1915, 1912, 1905, 1903 and 1902. Other years had had attacks, but in these five the disease was most widespread as well as severe. In each of these five seasons potato prices were higher towards the end of the season, March to June, than in any of the fall or winter months. The reason is plain. Consumers ate one end off the crop while the rot out of sight in the cellars was eating off the other end, and they met towards spring in the middle with but few potatoes left to eat the rest of the year.

The 1912 crop was the largest potato crop the United States ever grew for each consumer. With the population we had then its 420 million bushels figured out at the rate of no less than 4.43 bushels per capita, nearly three-eighths of a bushel more for every man, woman and child than last seasons' crop we have all thought to be so big. Late blight and rot were, bad that year, and in spite of the great size of the crop potatoes ran short in the spring. Prices at New York city were higher in May than in any other month of that season.

Southern New Crop Plantings

Plantings in the South this year have run about one-third smaller than last year. For Florida, the planting is estimated as being 16,000 acres against 23,000 last year. Southern farmers are short of money to buy the seed and expensive fertilizer needed to plant. This means that unless they have an unusually favorable season the South will not have many potatoes to compete with the rest of the northern hold-over.

Carlots Only Part of Whole Crop

With a minute's thought any one can see, if he or she wishes, something some do not, that the car lot movement is only a fraction of the whole crop, generally between one-quarter and one-third. Nearly 40,000,000 people on American farms eat a lot of potatoes, even more than the same number of city residents. A large share of city trade is supplied by wagon and auto truck. I live a few miles from a city of 25,000 people who seldom ever buy a car of potatoes from outside, all being supplied by local growers. It takes around 40,000,000 bushels of seed to plant our potato acreage of nearly 4,000,000 acres. Even in years without rot there must be some

shrinkage in storage. Records at Washington show that for the last twelve years the late or main crop of northern potatoes averages between 45 and 50 per cent used up by January first. The shipments later from January to along in June, farm consumption, shrinkage and seed take an immense quantity of potatoes to supply. This season there is less than three-eighths of the northern states' crop left to last thru. Some states as New York and Michigan have very heavy stocks, but it is the total of holdings that counts, and that is short many millions of bushels.

The Future of Potatoes

Two great factors are going to fight each other all the rest of this potato shipping season to set the price. The first great factor is the world wide fall in prices which has been going on for the last six or more months. No one wants to buy potatoes or anything else in any quantity when the article may be lower soon. With potatoes, as with everything else, most holders have been anxious to sell, even at a loss. Bankers and manufacturers believe that bottom has been reached. Many factories have started up again. We must expect that the recovery will be slow, and that it may not be fully in effect till our old potatoes are all gone. At any rate, it would be hard for potato growers to find a more discouraged lot of buyers than they have had since last fall. In one way hard times have been a blessing to potato growers if not to makers of automobiles. As one old farmer out in Michigan said, "A lot of these silk-shirt folks have quit eating grapefruit and took up potatoes again."

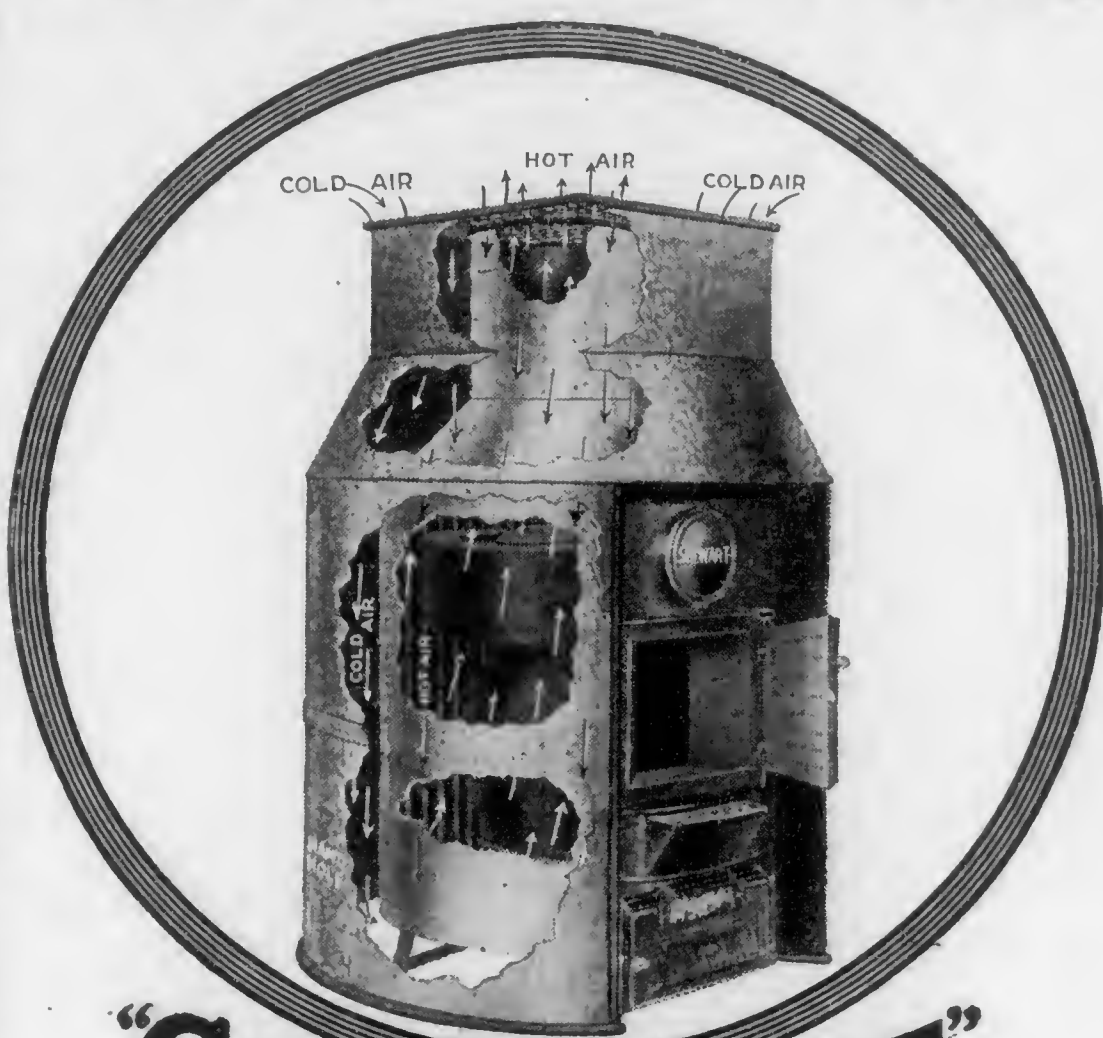
Against this falling price level we have the factors that consumption has been the heaviest ever known, that stocks are already reported short for the nation as a whole and that rot in storage will continue. The lesson of other blight and rot seasons is that potatoes will be higher towards the end of the season, even with a heavy crop.

WHITE GRUBS IN THE CORN

Severe injury from white grub is to be expected this season thruout southern New York, northern Ohio, the southern half of Michigan, northern Indiana and Illinois, eastern Iowa and southern Wisconsin. Every three years these regions are visited with outbreaks of this pest, because of the fact that it takes three years for the insects to pass thru their complete life cycle. There will be an abundance of small grubs this year of what is known to entomologists as "Brood A" of the white grub. They will occur especially in fields that were in grass last year, and potatoes nor corn should be planted on such land.

Ground that was in pure clover or even in corn last year is likely to be quite safe for planting to corn this year. A good rotation of crops to escape white grub injury is as follows: First year, oats or barley; second year, clover; third year, corn. Timothy or other grasses harbor white grubs from year to year and, therefore, in case they are grown, the land producing them should not be planted to corn, at least for the first year after it is broken from the sod.

HEATS WHOLE HOUSE | KEEPS CELLAR COOL | USES LESS FUEL

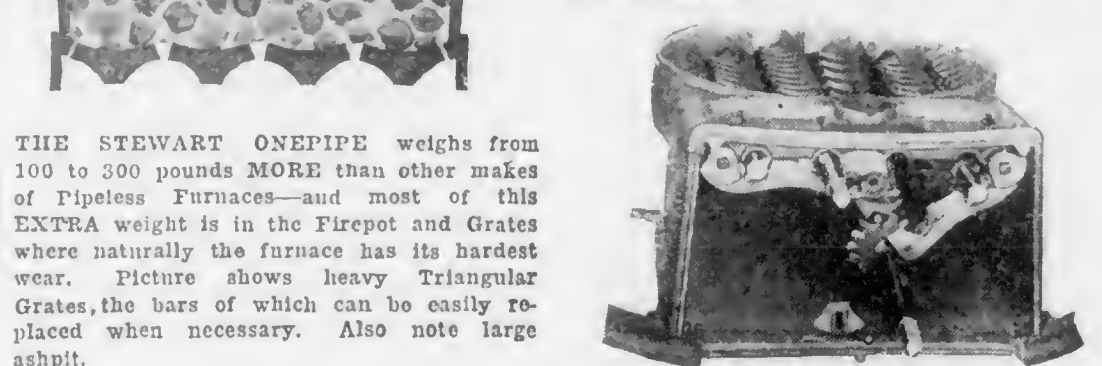


"STEWART" Onepipe Furnace

FARM HOMES by the hundreds are putting in this Powerful NEW Heater because it is built to meet farm home heating requirements. It HEATS the house thoroughly—every room—even in below-zero weather and KEEPS THE CELLAR COOL, so that it can be used as usual for storage of vegetables, fruits and foodstuffs.

STEWART ONEPIPE Furnaces are now giving users the same dependable, satisfactory service that STEWART Stoves and Ranges have been famous for since 1832. Back of this Furnace and built into it is the experience of eighty-nine years of successful stove and furnace manufacturing. It is RIGHT in principle, design, materials and construction, and can be depended upon absolutely for lifetime service and satisfaction.

ONEPIPE Furnaces are sized according to width across TOP of firepot, 20, 22, 24, etc. inches. In some makes the firepot tapers in, so that at grate the diameter is four or five inches LESS than top measurement. This makes its coal and consequently its heating capacity MUCH LESS than the STEWART, whose firepot, built EXTRA HEAVY, varies only 2 inches in top and bottom measurement, as illustration shows. A 22-inch STEWART ONEPIPE for example, about equals in heating capacity a 24-inch furnace of other makes.



THE STEWART ONEPIPE weighs from 100 to 300 pounds MORE than other makes of Pipeless Furnaces—and most of this EXTRA weight is in the Firepot and Grates where naturally the furnace has its hardest wear. Picture shows heavy Triangular Grates, the bars of which can be easily replaced when necessary. Also note large ashpit.

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Send No Money

The Lucile is made in the newest spring style of excellent quality. Fully lined. Wearable Serge. Beautiful silk finish. Fastened on each side with strong snap fasteners. Long, tailored jacket collar beautifully trimmed with an all silk satin embroidery. Two-piece vest with buttoned placket. Plain ash belt. Skirt has two vertical pleats on each side of front—very stylish fullness. Ladies sizes 32 to 44. Cost, about 40 inches. Misses sizes 16 to 28 years. Possible every blue color only. Size year.

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Of Interest to Farm Women and Girls

Early Spring Vegetable Dishes

THESE recipes may be helpful to the housewife who is puzzled as to how to make variations in the ways of serving the root and similar vegetables to which most of us are limited at this time of year.

Parsnip Cakes.—To 1 cup grated raw parsnip add 1 cup breadcrumbs, 2 well beaten eggs, and 1 tablespoon cooking oil. Season with salt and pepper, moisten with milk and shape into flat cakes. Bake in a pan containing meat drippings, basting the cakes frequently until they are nicely browned and crusty.

Parsnip Oysters.—These are made the same way, except that they are dropped on a hot greased griddle, once with oyster crackers.



Dishes all sorted, ready for washing, with soap, scouring powder, brush, cloths and pans at hand. Two good wire draining racks, one for the dishes and the other for pans and kettles would save wiping the dishes. If scalded with boiling water from the teakettle, the dishes will soon dry themselves.

and baked on both sides until brown. **Smothered Parsnips.**—Dice a thick slice of salt pork, and brown it in a saucepan; add 1 pint each of sliced potatoes and parsnips, season with salt and pepper, and lay over the vegetables a rich biscuit dough. Make a hole in the center of the dough, pour in 1 pint of meat stock, cover and cook in a quick oven for half hour.

Buttered Parsnips.—Boil the parsnips in a little salted water until they are tender, then drain well. Put 2 tablespoons butter, 1 tablespoon chopped parsley, salt and pepper in a saucepan, and when it bubbles up add 3 tablespoons cream. Pour this over the parsnips, and serve at once.

Parsnips Balls.—Mash boiled parsnips, season with salt, pepper and a little butter. Add a little flour and 2 well beaten eggs, shape into tiny balls, and fry in hot deep fat. Nice to serve with roast meat.

Salsify or Vegetable Oysters. Oyster Plant Potpie.—Soak and scrape the salsify roots, then cook until tender in boiling water. Slice them, and place in a pan lined with biscuit dough, which has been lightly baked. Fill up with a thin sauce, add a little shredded codfish, sprinkle with pepper and salt, dot with butter, cover with a sheet of pastry, and bake until thoroughly done. Be sure to prick the pastry cover well.

Salsify Fritters.—Wash and scrape the roots and put at once into cold water to which a little vinegar has been added to keep the salsify look-

fine enough cabbage to make two quarts, put it in a saucepan of boiling water, add 1 teaspoon of salt, and boil slowly for 20 minutes. Make 1 pint of white sauce (with flour, butter and milk), and alternate layers of the cabbage and this sauce in a baking dish until the dish is full, or all ingredients are used. Sprinkle buttered breadcrumbs over the top, and bake in a quick oven 20 minutes. Sometimes grate some cheese over the top to add a different flavor, and to increase the nutritive value of the dish.

Russian Cabbage.—Cut a head of cabbage very fine, soak it in cold water half an hour, then drain very dry. Boil in salted water 15 minutes, drain again, return to the kettle, add 1 pint cream, 1/2 teaspoon salt and a little pepper, and let simmer gently 10 minutes. Then mix in gently 1 tablespoon butter, and serve at once.

Celery and Dried Beef.—Dice the outer stalks of celery until you have two cups. Boil until tender, which will take about 15 minutes. Save 1 cup of the celery water, add to it 1/2-pound of dried beef, and simmer gently a few minutes while you make a white sauce of 2 tablespoons flour, 2 tablespoons butter or other fat and 1 cup milk. Add this to the celery and dried beef, cook 10 minutes, preferably in a double boiler, and serve on toast or with baked potatoes.

Carrot Fritters.—Clean and scrape some small firm carrots, and cut in two lengthwise. Boil until tender in salted water, drain and cool. Make a batter of 1 egg, 1 cup flour, 1/2 cup milk, a little salt and 1 tablespoon melted fat, mix thoroughly, and add 1 teaspoon baking powder. Dip the pieces of carrot in this batter, then drop them into deep hot fat, and fry until brown. Serve hot.

Harvard Beets.—Wash the beets, and cook in boiling salted water until tender; drain, skin and cut into thin slices. Mix half cup of sugar and half of cup corn starch and half cup vinegar, and let boil 5 minutes. Pour this over the beets and let them stand in a warm place half an hour. Then add 2 tablespoons butter, and serve immediately.—Mrs. F. W. Stillman, New Jersey.

Good seed measures the difference between success or failure in most gardens.



The farmers' wife who washes dishes at this sink has hot and cold soft water from an attic tank and very cold drinking water from a spring on the hill above the house coming to her sink by these three faucets. The hot water is made by a kerosene water heater attached to the tank that sets near the furnace in the cellar. The tank is heated by the furnace in the winter.

A GOOD COMMUNITY ENTERPRISE

Our town has established a lecture and concert course. Last year we had seven numbers, and this year eight, consisting of lectures on current subjects of interest, concerts of vocal and instrumental music, impersonations, etc.

The price of each course ticket has been only \$1.75. And some of the numbers cost over \$100 to bring here. Nevertheless our little village of only 400 people, with the surrounding farmers, have supported the enterprise so well that we have never run behind. The numbers are held in our high school auditorium, which is really quite a fine hall. We are four miles from a railroad station. Every evening there have been large, interested, appreciative audiences, and the numbers have been wonderfully educational for us, particularly our young people.

We have no movies, and this sort of culture leads to appreciation of the better forms of entertainment. No one is trying to make money out of it, for it is purely a community effort to give ourselves and our families something good and pay expenses. Every one who buys a ticket a member of our Lyceum Association, but the price of the course ticket is all the dues there are to pay.

Our course year extends from October to about May 1. If there is any money left, it is used for making the next year's course a little better. We sell quite a good many one-night tickets, for which we charge 35 cents. We put out pamphlets advertising the course, the dates, the features and giving pictures of the entertainers. Cuts are furnished by the bureau thru which we arrange for the course, and the local advertising which we get to put in the pamphlets pays for the expense of circulating them. Our ushers are high school pupils, who are given the courses free for their service; we have a different set for each night.—C. J. S., Cumberland Co., New Jersey.

VENTILATION WITHOUT DRAFTS

The simplest way to have fresh air without drafts, according to the leaders in health work, is to place a folding screen in front of the window. This method of cutting off drafts, is not adequate if there is a strong wind and it does not prevent snow and rain from blowing into the room.

A simple window ventilator may be made by covering an ordinary window screen with heavy unbleached muslin, or by making narrow strips of board into a frame the width of the window and the desired height—usually 4 to 6 inches—and stretching one thickness of unbleached muslin across the frame, tacking it firmly on all four sides.

One of these ventilators should be inserted both above the top sash and below the bottom sash of the window, since the air will circulate more freely if the windows are open at the top as well as at the bottom.

It is desirable to open two windows on different sides of the room in order that there may be a cross circulation of air.—N. Y. Agricultural College.

Take Castor Oil This Way.—Another use for the all-important castor oil. A small amount rubbed into the scalp is an excellent hair tonic.

How about a small home orchard, planted especially for table use?

PENNSYLVANIA FARMER PATTERNS

Give figures and letters of each pattern exactly as printed at beginning of each description or we will not be responsible for correct fitting of orders. Give just measure when ordering waist patterns, waist measure for skirt, and age for children's patterns. Address Pennsylvania Farmer, 261 S. Third Street, Philadelphia, Pa.

3248.—Pretty Dress for a Junior. Pattern is cut in 3 sizes: 12, 14 and 16 years. For a 14-year size 4 1/2 yards of 36 inch material will be required. As here shown figured foulard was used. One may have this in dotted Swiss, organdie or challie. A crush girle or sash of silk or ribbon in a contrasting shade forms a pretty finish. Pattern, 10 cents.



2990.—Simple Frock for a Little Miss.—One may choose gingham, percale or lawn for this style, or checked or plaid suiting. An attractive effect is gained by cutting waist and pockets bias. The sleeve may be finished in wrist or elbow length. The pattern is cut in 5 sizes: 2, 4, 6, 8 and 10 years. Size 6 requires 2 1/2 yards of 36-inch material.—Pattern, 10 cents.

3480.—School Dress.—The pattern is cut in 4 sizes: 6, 8, 10 and 12 years. A 10-year size requires 3 1/2 yards of 38-inch material. Pattern, 10 cents.



3491.—Party Frock for Girls.—This pattern is cut in 4 sizes: 6, 8, 10 and 12 years. A 10-year size will require 3 1/2 yards of 38-inch material. The panel may be omitted, and the sleeve finished in wrist or elbow length. Voile and lace, taffeta and ribbon, serge and satin, could be combined for this design. It is also good for gingham and percale. Pattern, 10 cents.

Good Cleaner for Rugs.—One tablespoonful of turpentine in a quart of warm water not only cleans carpets and rugs, but brightens them up a lot and is apt to discourage moths.

Boys and Their Sisters.—Teaching a boy to treat his sister with respect and courtesy is not making a "sissy" of him. It is insuring that when he gets to be a man he will unconsciously treat other peoples' sisters with the same respect and courtesy, and some day will thank his mother for the early training.

WOMEN FOLKS!

YOU CAN MAKE THIS DRESS-FORM EASILY IN YOUR HOME AT A TOTAL COST OF ONE DOLLAR

A Special Introductory Offer

To make the Liberty Dress Form the only things required are a needle and thread, a pair of scissors and a bowl of water, and the Liberty Dress Form set. The form is easily shaped on your figure. A friend, daughter or your husband can do it in an hour. It requires no skill—merely the following of simple directions enclosed in the box. And when it is completed you have a dress form on which you can fit your dresses accurately. It is your figure reproduced exactly.

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Think of the improvement in the fit of your clothes! Proper fitting is all important in making stylish waist, dress or suit. That is why ordinary dress forms don't always do. The Liberty Dress Form does away with all doubts and fears about fitting, because it reproduces your figure exactly.

How easy it would be to take some silk or other dainty material and in a spare hour or two run up a pretty little blouse for Easter with the help of your Liberty Dress Form—a blouse that really and truly fits—with no need for later alterations and trouble. Or a substantial house dress of gingham! No fuss or bother trying the half-finished garment on yourself or on a dress form that does not truly

represent your figure. The cost of the Liberty Dress Form is so small that you can easily provide one for each of the womenfolk in your family, and thus save all dress-maker's bills.

Used by U. S. Demonstration Agents Don't think of the Liberty Dress Form as something new and untried. Demonstration Agents of the United States Department of Agriculture have been busy making dress forms exactly like this in many communities throughout the country. They are demonstrating how quickly and simply these forms are made—urging women to make them in their own homes, thus saving the cost of expensive mechanically-regulated or papier-mâché forms and the trouble of putting the dress on a living model. Already thousands of these forms have been made and are in successful use in many homes.

Act Now

Fill out and mail coupon below along with your dollar—now. You will then receive the Liberty Dress Form set in ample time to make up your Easter clothes. The set is made for 3 sizes—small, medium and large and consists of a shirt of special make for this purpose, a sponge, a full supply of tape and complete instructions for making. The picture above shows how the dress form will appear when completed. Don't delay. Send now.

Liberty Paper Company, 52 Vanderbilt Avenue, New York, N. Y.—Enclosed is one dollar, for which please send me, post-paid, the Liberty Dress Form set, as advertised. C

Name.....

Size: (Check size) Small.....Medium.....Large.....
(under 32" bust) (32" to 40" bust) (over 40" bust)

R. F. D., or Street.....Town.....State.....

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Beechwood RANGES

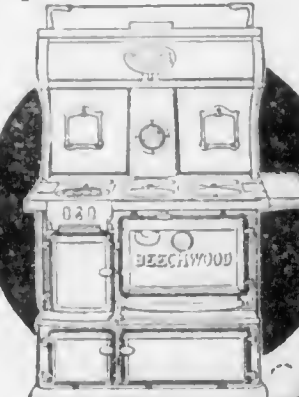
Every woman who owns a Beechwood prizes it for its dependability, its economy and its easy upkeep. The fire is always under control. Beechwood Drafts give you a quick or slow fire just as you want. There's no uncertainty.

With one turn the Beechwood Duplex grate not only rakes your fire but puts it in shape for immediate cooking. The Ventilated Cross-Piece saves coal.

Beechwood Enameled Ranges will not chip, craze, crack or discolor. They're easily cleaned and need no blacking. Three colors, blue, brown, and gray.

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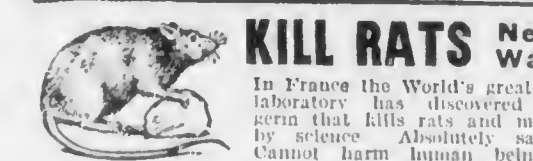
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The Voice of the Pack

by Edison Marshall

CHAPTER XIII

BERT CRANSTON waited in a clump of exposed thicket on the hillside until he saw two black dots, that he knew were Dan and Snowbird, leave the Lennox home. He lay very still as they circled up the ridge, noticing that except for the pistol that he knew Snowbird always carried, they were unarmed. There was no particular reason why he should be interested in that point. It was just the mountain way always to look for weapons, and it is rather difficult to trace the mental processes behind this impulse. Perhaps it can be laid to the fact that many mountain families are often at feud with one another, and anything in the way of violence may happen before the morning.

The two passed out of his sight, and after a long time he heard the crack of Snowbird's pistol. He guessed that she had either shot at some wild creature, or else was merely at target practice—rather a common proceeding for the two when they were on the hills together. Thus it is to be seen that Cranston knew their habits fairly well. And since he had kept a close watch upon them for several days, this was to be expected.

He had no intention of being interrupted in this work he was about to do. He had planned it all very well. At first the intermittent snowstorms and the thaws between had delayed him. He needed a perfect snow crust for the long tramp over the ridge; and at last the bright days and the icy dawns had made it. The elder Lennox was still helpless. He had noticed that when Dan and Snowbird went out, they were usually gone from two to four hours; and that gave him plenty of time for his undertaking. The moment had come at last to make a thorough search of Lennox's house for those incriminating documents that Dan had found near the body of Landy Hildreth.

The only really dangerous part of his undertaking was his approach. If by any chance Lennox were looking out of the window, he might be found waiting with a rifle across his arms. It would be quite like the old mountaineer to have his gun beside him, and to shoot it quick and exceptionally straight, without asking questions, at any stealing figure in the snow. Yet Cranston felt fairly sure that Lennox was still to helplessness to raise a gun to a shooting position.

He had observed that the mountaineer spent his time either on the fireplace divan or on his own bed. Neither of these places was available to the rear windows of the house. So, very wisely, he made his attack from the rear.

He came stealing across the snow—a musher of the first degree. Very silently and swiftly he slipped off his

snowshoes at the door. The door itself was unlocked, just as he had supposed. In an instant more he was tiptoeing, a dark, silent figure, thru the corridors of the house. He held his rifle ready in his hands.

He peered into Lennox's bedroom first. The room was unoccupied. Then the floor of the corridor creaked beneath his step; and he knew nothing further was to be gained by waiting. If Lennox suspected his presence, he might be waiting with aimed rifle as he opened the door of the living room.

He glided faster. He halted once more—a moment at the living room door to see if Lennox had been dis-

“that the doors of my house were no longer open to you.”

“You did say that,” was Cranston's guttural reply. “But you see I'm here just the same, don't you? And what are you going to do about it?”

“I probably felt that sooner or later you would come to steal—just as you and your crowd stole the supplies from the forest station last winter—and that probably influenced me to give the orders. I didn't want thieves around my house, and I don't want them now. I don't want coyotes, either.”

“And I don't want any such remarks out of you, either,” Cranston answered him. “You lie still and shut up, and I suspect that sissy boarder of yours will come back, after he's thru embracing your daughter in the snow, and find you in one piece. Otherwise not.”

“If I were in one piece,” Lennox answered him very quietly, “instead of a bundle of broken bones that can't lift its arms, I'd get up off this couch, unarmed as I am, and stamp on your lying lips.”

But Cranston only laughed and

deer horns over the fireplace, and was entirely exhausted from it. He had succeeded in getting down from the couch, though wracked by agony, but had been unable to lift himself up in reach of the gun.

Cranston read his intention in one glance. Lennox knew it, but he simply didn't care. He had passed the point where anything seemed to matter.

“Tell me where it is,” Cranston ordered him. Again he pointed his rifle at Lennox's wasted breast.

“Tell you where what is? My money?”

“You know what I want—and it isn't money. I mean those letters that Failing found on the ridge. I'm thru fooling, Lennox. Dan learned that long ago, and it's time you learned it now.”

“Dan learned it because he was sick. He isn't sick now. Don't presume too much on that.”

Cranston laughed with harsh scorn. “But that isn't the question. I said I've wasted all the time I'm going to. You are an old man and helpless; but I'm not going to let that stand in the way of getting what I came to get. They're hidden somewhere around this house. They wouldn't be out in the snow, because he'd want 'em where he could get them. By no means would he carry them on his person—fearing that some day he'd meet me on the ridge. He's a fool, but he ain't that much of a fool. I've watched, and he's had no chance to take them into town. I'll give you—just five seconds to tell me where they're hidden.”

“And I give you,” Lennox replied, “one second less than that—to go to blazes!”

Both of them breathed hard in the quiet room. Cranston was trembling now, shivering just a little in his arms and shoulders. “Don't get me wrong, Lennox,” he warned.

“And don't have any delusions in regard to me, either,” Lennox replied. “I've stood worse pain, from this accident, than any man can give me while I yet live, no matter what he does. If you want to get on me and hammer me in the approved Cranston way, I can't defend myself—but you won't get a civil answer out of me. I'm used to pain, and I can stand it. I'm not used to fawning to a coyote like you, and I can't stand it.”

But Cranston hardly heard. An idea had flamed in his mind and cast a red glamour over all the scene about him. It was instilling a poison in his nerves and a madness in his blood, in his dark brain. Nothing seemed real. He suddenly bent forward, tense.

“That's all right about you,” he said. “But you'd be a little more polite if it was Snowbird—and Dan—that would have to pay.”

Perhaps the color faded slightly in Lennox's face; but his voice did not change.

“They'll see your footprints before they come in and be ready,” Lennox replied evenly. “They always come by the back way. And even with a pistol, Snowbird's a match for you.”

“Did you think that was what I meant?” Cranston scorned. “I know a way to destroy those letters, and I'll do it—in the four seconds that I said, unless you tell. I'm not even sure I'm going to give you a chance to tell now; it's too good a scheme. There won't be any witnesses then to yell around in courts. What if I choose to set fire to this house?”

“It wouldn't surprise me a great deal. It's your own trade. Lennox

shuddered once on his place on the floor.

“I wouldn't have to worry about those letters then, would I? They are somewhere in the house, and they'd be burned to ashes. But that isn't all that would be burned. You could maybe crawl out, but you couldn't carry the guns, and you couldn't carry the pantry full of food. You are nearly eighty miles up here from the nearest occupied house, with two pair of snowshoes for the three of you and one dinky pistol. And you can't walk at all. It would be a nice pickle, wouldn't it? Wouldn't you have a fat chance of getting down to civilization?”

The voice no longer held steady. It trembled with passion. This was no idle threat. The brain had already seized upon the scheme with every intention of carrying it out. Outside the snow glittered in the sunlight, and pine limbs bowed with their load; overhanging with that curious winter silence that, once felt, returns often in dreams. The wilderness lay stark and bare, stripped of all delusion—not only in the snow world outside but in the hearts of these two men, its sons.

“I have only one hope,” Lennox replied. “I hope, unknown to me, that Dan has already dispatched those letters. The arm of the law is long, Cranston. It's easy to forget that fact up here. It will reach you in the end.”

Cranston turned thru the door, into the kitchen. He was gone a long time. Lennox heard him at work: the crinkle of paper and then a pouring sound around the walls. Then he heard the sharp crack of a match. An instant later the first wisp of smoke came curling, pungent with burning oil, thru the corridor.

“You crawled from your couch to reach that gun,” Cranston told him when he came in. “Let's see you crawl out now.”

Lennox's answer was a curse—the last, dread outpouring of an unbroken will. He didn't look again at the glittering eyes. He scarcely watched Cranston's further preparations: the oil poured on the rugs and furniture, the kindling placed at the base of the curtains. Cranston was trained in this work. He was taking no chances on the fire being extinguished. And Lennox began to crawl toward the door.

He managed to grasp the corner of the blanket on the divan as he went, and he dragged it behind him. Pain wracked him, and smoke half-blinded him. But he made it at last. And by the time he had crawled one hundred feet over the snow crust, the whole structure was in flames.

The red tongues spoke with a roar. Cranston, the fire-madness on his face, hurried to the outbuildings. There he repeated the work. He touched a match to the hay in the barn, and the wind flung the flame thru it in an instant. The sheds and other outbuildings were treated with oil. And seeing that his work was done, he called once to the prone body of Lennox on the snow and rushed away into the silences.

Lennox's answer was not a curse this time. Rather it was a prayer, unuttered, and in his long years Lennox had not prayed often. When he prayed at all, the words were that of Samson—that for a moment his strength might come back to him.

CHAPTER XIV

Two miles across the ridges, Dan and Snowbird saw a faint mist blowing between the trees. They didn't recognize it at first. It might be

fine snow, blown by the wind, or even one of those mysterious fogs that sometimes sweep over the snow.

“But it looks like smoke,” Snowbird said.

“But it couldn't be. The trees are too wet to burn.”

But then a sound that at first was just the faintest whisper in which neither of them would let themselves believe, became distinct past all denying. It was that menacing crackle of a great fire, that in the whole world of sounds is perhaps the most terrible. They were trained by the hills, and neither of them tried to mince words. They had learned to face the truth, and they faced it now.

“It's our house,” Snowbird told him. “And father can't get out.”

She spoke very quietly. Perhaps the most terrible truths of life are always spoken in that same quiet voice.

“He can crawl a little,” Dan called to her. “Don't give up, Snowbird mine. I think he'll be safe.”

They mounted to the top of the ridge; and the long sweep of the forest was revealed to them. The house was a singular tall pillar of flame, already glowing that dreadful red from which firemen, despairing, turn away. Then the girl seized his hands and danced about him in a mad circle.

“He's alive,” she cried. “You can see him—just a dot on the snow. He crawled out to safety.”

“Haste makes waste,” he told her. “Keep your feet on the ground, Snowbird; the house is gone already and your father is safe. Remember what lies before us.”

The thought sobered and halted her. She glanced once at the dark face of her companion. Dan couldn't understand the strange light that suddenly leaped to her eyes. Perhaps she herself couldn't have explained the wave of tenderness that swept over her—with no cause except the look in Dan's earnest gray eyes and the lines that cut so deep. Since the world was new, it has been the boast of the boldest of men that they looked their fate in the face. And this is no mean looking. For fate is a sword from the darkness, a power that reaches out of the mystery, and cannot be classed with sights of human origin. It burns out the eyes of all but the strongest men. Yet Dan was looking at his fate now, and his eyes held straight.

They walked together down to the ruined house, and the three of them sat silent while the fire burned red. Then Lennox turned to them with a half-smile.

“You're wasting time, you two,” he said. “Remember all our food is gone. If you start now, and walk hard, maybe you can make it out.”

“There are several things to do first,” Dan answered simply.

“I don't know what they are. It isn't going to be any picnic. Dan, a man can travel only so far without food to keep up his strength, particularly over such ridges as you have to cross. It will be easy to give up and die. It's the test, man; it's the test.”

“And what about you?” his daughter asked.

“Oh, I'll be all right. Besides—it's the only thing that can be done. I can't walk, and you can't carry me on your backs. What else remains? I'll stay here—and I'll scrape together enough wood to keep a fire. Then you can bring help.”

He kept his eyes averted when he talked. He was afraid for Dan to see them, knowing that he could read

the lie in them.

“How do you expect to find wood—in this snow?” Dan asked him. “It will take four days to get out; do you think you could lie here and battle with a fire for four days, and then four days more that it will take to come back? You have two choices: burn green wood that I'd cut for you before I left, or rainsoaked dead wood under the snow. You couldn't keep either one of them burning, and you'd die in a night. Besides—this is no time for an unarmed man to be alone in the hills.”

Lennox's voice grew pleading. “Be sensible, Dan!” he cried. “That Cranston's got us, and got us right. I've only one thing more I care about—and that is that you pay the debt! I can't hope to get out myself. I say that I can't even hope to. But if you bring my daughter thru—and when the spring comes, pay what we owe to Cranston—I'll be content. Heavens, son—I've lived my life. The old pack leader dies when his time comes, and so does a man.”

His daughter crept to him and sheltered his gray head against her breast. “I'll stay with you then,” she cried.

“Don't be a little fool, Snowbird,” he urged. “My clothes are wet already from the melted snow. It's too long a way—it will be too hard a fight, and children—I'm old and tired out. I don't want to make the try—hunger and cold; and even if you'd stay here and grub wood, Snowbird, they'd find us both dead when they came back in a week. We can't live without food, and work and keep warm—and there isn't a living creature in the hills.”

“Except the wolves,” Dan reminded him.

“Except the wolves,” Lennox echoed. “Remember, we're unarmed—and they'd find it out. You're young, Snowbird, and so is Dan—and you two will be happy. I know how things are, you two—more than you know yourselves—and in the end you'll be happy. But me—I'm too tired to make the try. I don't care about it enough. I'm going to wave you good-by, and smile, and lie here and let the cold come down. You feel warm in a little while.”

But she stopped his lips with her hand. And he bent and kissed it.

“If anybody's going to stay with you,” Dan told them in a clear, firm voice, “it's going to be me. But aren't any of the cabins occupied?”

“You know they aren't,” Lennox answered. “Not even the houses beyond the North Fork, even if we get across. The nearest help is over seventy miles.”

“And Snowbird, think! Haven't any supplies been left in the ranger station?”

“Not one thing,” the girl told him. “You know Cranston and his crowd robbed the place last winter. And the telephone lines were disconnected when the rangers left.”

“Then the only way is for me to stay here. You can take the pistol, and you'll have a fair chance of getting thru. I'll grub wood for our camp meanwhile, and you can bring help.”

“And if the wolves come, or if help didn't come in time,” Lennox whispered, passion-drawn for the first time, “who would pay what we owe to Cranston?”

“But her life counts—first of all.”

“I know it does—but mine does not count at all. Believe me, you two, I'm speaking from my own desires when I say I don't want to make the fight. Snowbird would never make it thru alone. There are

the wolves, and maybe Cranston too—the worst wolf of all. A woman can't mush across those ridges four days without food, without some one who loves her and forces her on! Neither can she stay here with me and try to make green branches burn in a fire. She's got three little pistol balls—and we'd all die for a whim. Oh, please, please—”

But Dan leaped for his hand with glowing eyes. “Listen, man!” he cried. “I know another way yet. I know more than one way; but one, if we've got the strength, is almost sure. There is an ax in the kitchen, and the blade will still be good.”

“I'll cut a limb with my jackknife for the handle. There will be nails in the ashes, plenty of them. We'll make a rude sledge, and we'll get you out too.”

Lennox seemed to be studying his wasted hands. “It's a chance, but it isn't worth it,” he said at last. “You'll have fight enough, without tugging at a heavy sled. It will take all night to build it, and it will cut down your chances of getting out by pretty near half. Remember the ridges, Dan—”

“But we'll climb every ridge—besides, it's a slow, down grade most of the way. Snowbird—tell him he must do it.”

Snowbird told him, overpowering him with her enthusiasm. And Dan shook his shoulders with rough hands. “You're hurting, boy!” Lennox warned. “I'm a bag of broken bones.”

“I'll tote you down there if I have to tie you in,” Dan Failing replied. “Before, I've bowed to your will; but this time you have to bow to mine. I'm not going to let you stay here and die, no matter if you beg on your knees! It's the test—and I'm going to bring you thru.”

He meant what he said. If mortal strength and sinew could survive such a test, he would succeed. There was nothing in these words to suggest the physical weakening that both of them had known a few months before. The eyes were earnest, the dark face intent, the determined voice did not waver at all.

“Dan Failing speaks!” Lennox replied with glowing eyes. He was recalling another Dan Failing of the dead years, a boyhood hero, and his remembered voice had never been more determined, more masterful than this he had just heard.

“And Cranston didn't get his purpose, after all.” To prove his words, Dan thrust his hand into his inner coat pocket. He drew forth a little, flat package, half as thick as a pack of cards. He held it up for them to see. “The thing Bert Cranston burned the house down to destroy,” he explained. “I'm learning to know this mountain breed, Lennox. I kept it in my pocket where I could fight for it, at any minute.”

Cranston had been mistaken, after all, in thinking that in fear of himself Dan would be afraid to keep the packet on his person, and would cravenly conceal it in the house. He would have been even more surprised to know that Dan had lived in constant hope of meeting Cranston on the ridges, showing him what it contained, and fighting for it, hand to hand. And even yet, perhaps the day would come when Cranston would know at last that Snowbird's words, after the fight of long ago, were true.

The twilight was falling over the snow, so Snowbird and Dan turned to the toil of building a sled.

(Continued Next Week.)

Surface Goodness

“Her goodness is all on the surface,” said a woman in criticism of her neighbor.

That is exactly where goodness ought to be. The proper place for the biggest, reddest berries is at the top of the basket.

No admiration is due the man whose conduct must be excused on the plea that he has a good heart. He who prides himself on always saying what he thinks usually has a headful of disagreeable thoughts.

We all suffer lapses from our own ideals, of course; but usually we are at heart just about what we seem to our neighbors to be. You are sure to be deceived about yourself if you indulge the habit of excusing your unlovely conduct on the score of the secret goodness of your intentions.

It is a sound principle of civilization that men are to conceal the unlovely and disgusting from the eyes of their neighbors. A good man displays to the world his best self, not his worst. As he covers his body with seemly garments so he covers his ugly moods with courtesy and fellowship.

If you have a smile in your system, display it where it may cheer your fellows.

If you have any goodness in you, let's see it.

ALVIN E. MAGARY.

turned. He was lying still, however, so Cranston pushed thru.

Lennox glanced up from his magazine to find that unmistakable thing, the barrel of a rifle, pointed at his breast. Cranston was one of those rare marksmen who shoots with both eyes open—and that meant that he kept his full visual powers to the last instant before the hammer fell.

“I can't raise my arms,” Lennox said simply. “One of 'em won't work at all—besides, against the doctor's orders.”

Cranston stole over toward him, looking closely for weapons. He pulled aside the woolen blanket that Lennox had drawn up over his body, and he pushed his hand into the cushions of the couch. A few deft pats, holding his rifle thru the fork of his arm, finger coiled into the trigger guard, assured him that Lennox was not “heeled” at all. Then he laughed and went to work.

“I thought I told you once,” Lennox began with perfect coldness,

fled Lennox's feet with a cord from the window shade.

He went to work very systematically. First he rifled Lennox's desk in the living room. Then he looked on all the mantles and ransacked the cupboards and the drawers. He was taunting and calm at first. But as the moments passed, his passion grew upon him. He no longer smiled. The rodent features became intent; the eyes narrowed to curious, bright slits under the dark lashes. He went to Dan's room, searched his bureau drawer and all the pockets of the clothes hanging in his closet. He upset his trunk and pawed among old letters in the suitcase. Then, stealing like some creature of the wilderness, he came back to the living room.

Lennox was not on the divan where he had left him. He lay instead on the floor near the fireplace; and he met the passion-drawn face with entire calmness. His motives were perfectly plain. He had just made a desperate effort to procure Dan's rifle that hung on two sets of

ward, tense.

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Perhaps the color faded slightly in Lennox's face; but his voice did not change.

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“It wouldn't surprise me a great deal. It's your own trade. Lennox

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HENS WITH BRONCHITIS

My chickens make a peculiar wheezing sound when breathing, as though they had asthma. They keep their mouths partly open but do not seem to have any growth in mouth or throat. Their eyes are clear and they have good appetites. The trouble seems contagious. Can you tell me what to do for them?—K. J. H., Chester County, Pa.

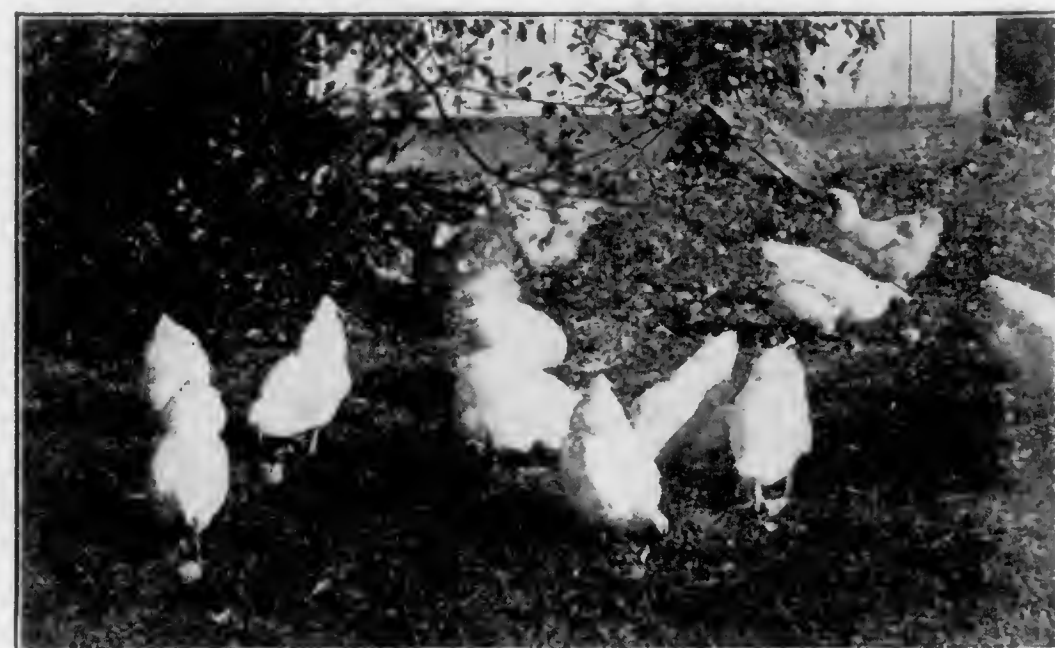
K. J. H.—Hens with bronchitis must be promptly treated before they lose in weight and become very weak. Add 8 drops of turpentine to a tablespoonful of castor oil and give that dose to each of the sick birds. This trouble is sometimes difficult to cure and every effort must be made to prevent it by housing the birds in coops free from dampness. Exposure to cold raw winds or rains often cause certain birds to have bronchitis. Isolate sick birds at once to prevent the trouble from spreading; feed the healthy birds balanced rations to keep them in good vigorous condition.

COLDS AND ROUP

Is there anything to be done for chickens when their eyes swell and they turn blind?—C. F., Morris Co., New Jersey.

Reader, Lancaster Co., Pa.—The germ in a turkey egg rapidly reduces in vitality as it grows older and the quicker incubation starts the greater the chances of obtaining vigorous poults. Usually a turkey hen lays 15 or 18 eggs and then becomes broody. The eggs should be gathered as soon after laying as possible and stored where the temperature will not range far from 55 degrees. We would not wish to hold turkey eggs more than two weeks if it can be avoided and the quicker they can be placed under hens or turkey mothers the greater the chances that they will hatch. This year the open winter has probably started the turkeys to laying earlier than usual. In an average year they seldom lay much before April first which enables the poultryman to obtain poults sometime in May when the weather is right for their growth.

Leghorn pullets hatched in April week of March or beginning of April early enough to produce eggs in November? I mean to lay steadily in November, when fed with the right kind of feed, or will they moult if hatched that early? My turkey hen is blue-headed and is losing weight. I can't see that she has any disease, but she doesn't eat half of the time. —Reader, Lancaster Co., Pa.



Good Picking for the Plymouth Rocks

C. F.—When hens eyes swell shut and they become blind it is usually due to a severe cold. It may rapidly develop into roup and this disease is indicated by the bad odor and the devitalized appearance of the bird. There is no satisfactory cure for roup and such birds should be killed and burned. Colds may be prevented by good feeding methods in a house free from draughts and dampness. Color the drinking water with permanganate of potassium and it will help to keep colds from spreading. Rubbing the head of a sick bird with camphorated vaseline may reduce swelling. Spraying the nostrils of a bird with a slight cold with the potassium permanganate solution may cause a quick cure. The best treatment of roup and colds will always be in prevention of the trouble.

When the heads of turkeys turn dark and they are droopy and off feed there is a danger of the disease called blackhead. This is incurable and has nearly closed up the turkey business in some sections. It can often be prevented by breeding from healthy unrelated stock on a range not infected with the disease.

LEG WEAKNESS

I have two chickens which cannot stand on their feet but a little while. They will not eat or drink. I have to force food down their throats. Will you please send me a remedy for them.—T. McG., New Jersey.

T. McG., New Jersey.—As you do not state any symptoms but the apparent leg weakness it is difficult to tell the trouble. Leg weakness or

SAVING TURKEY EGGS

I am anxious to know about how long one can keep turkeys eggs while turning them every day. My hen started laying the third week in January. Some say I can keep them until April but I can hardly believe that. Are Leghorn chicks in last

paralysis sometimes occurs among old fowls but treatment does not usually prove satisfactory and it is best to kill the birds and try to prevent it among the remainder of the flock by feeding a balanced ration in sanitary quarters so that the flock will remain vigorous.

When chickens will not eat, nothing is gained by trying to force feed them. A sick chicken seems to know by instinct that it cannot be helped by more food. Leg weakness most often occurs when birds are fed heavily to force either growth or egg production. It seems to afflict young cockerels more than other birds because their weight increases faster than their strength.

MORE MONEY FOR EGGS

Along with other farm products, eggs have gone down in price within the past few months and we hear poultrymen talk of quitting the business or of hatching fewer chicks this year. Of course many things about the farming situation wear a pessimistic color and some poultrymen are not slow in predicting dire disaster for their business. When conditions look that way to a man it is time to seek some way of changing conditions. I have recently had an opportunity to look over the eggs gathered up by a country merchant in a certain community. This man makes a weekly trip thru the country surrounding the village where he does business and takes the farmers' eggs in exchange for grain and groceries. Later he grades them, as best he can, and ships them to a city dealer. I have shipped eggs the same day and received two cents or more per dozen, from the same dealer, more than the merchant got for his best grade.

As the eggs are gathered up on his weekly rounds, they are found to be of all sizes and colors and in every possible sort of condition from a sanitary standpoint. Many have to be washed and this alone puts many of them in the lower grades. The candling process quickly shows if an egg has been scrubbed. Of course it is better to wash a dirty egg than to ship it in an unclean condition but the keeping qualities of that egg have been considerably lowered. Better plan to have clean nests so the eggs will not get dirty.

My experience with this merchant taught me how important it is to make and sell good eggs. Wherever it has been tried, the plan of adopting a standard for a community or association has been found to work admirably. The farmers get together and agree upon some one breed, then they use a distinctive trade mark or carton and consumers soon learn that they can rely upon that brand of eggs. The plan of standardizing the product has worked so well with whatever line it has been tried out that there seems no reason why it should not be particularly successful with eggs and poultry. I have learned of several communities where the poultrymen have concentrated on one breed and employed one of their number to handle the shipping end. In a certain town in a Western state the farmers got together and agreed to keep nothing but White Leghorns. One of the number was chosen to handle the shipping. Each member was provided with a rubber stamp with a certain number. Eggs were stamped with that number. At first all eggs were candled and graded by the shipper but as the members learned the standard they were supposed to live

up to, the candling was abandoned. Now the eggs are sent to a certain buyer and with every case a slip is enclosed asking that anything unsatisfactory about the eggs be reported at once, together with the number stamped upon the eggs in question. It has been found that eggs from this association are quoted several cents in advance of ordinary fresh eggs.

To bring the best prices, eggs should be shipped to market twice a week. Let the buyer understand that your eggs are not more than four days old and you will be pretty sure to get the top of the market. It may be said, then, that eggs should be fresh, of uniform coloring and, for first grade, should weigh at least 24 ounces per dozen. Eggs weighing less than two ounces each should be graded as pullet eggs. Poultrymen keeping two hundred layers can ship their own eggs. They will find it profitable to adopt a distinctive carton and cater to the highest-class trade. Some years ago it was possible to procure printed cartons holding one dozen each, at a price not exceeding one-half cent each. Today such cartons will cost more, but it pays to use them.

The writer knows a man who has contracted to furnish three cases of fresh eggs per week to an ice cream parlor. He gets five cents per dozen more than the market price. The proprietor is willing to pay extra because he can depend upon the supply the year around. In this case, it is not necessary to grade to a certain size for the reason that it is necessary to use some pullet eggs in the fall to make out the contracted quota.

Whatever plan is adopted, it is certain that farmers should adopt some method of marketing more profitable than selling to the village store. It is also true that they can sell a better product by making a little extra effort. When prices are going down, it is a good time to consider these things. It is one of the oldest of economic laws that when prices are high, almost anything goes, but when prices are down, only the best is wanted.—C. H. Chesley.

CULLING HENS REDUCES COSTS

Throwing out the low producing hen in the many poultry culling demonstrations held during the past year in Pennsylvania under the direction of county farm agents and Pennsylvania State College specialists, proved to be a very profitable act, according to statistics just announced by the college extension service.

A total of 453 culling demonstrations were conducted in sixteen counties, the chief purpose being to show the farmers who came from miles around how to identify the poor producing hen. The meetings were attended by 10,957 people, who represented flocks totaling \$50,000 birds. Each farmer was given an opportunity to handle the birds and pass his judgment regarding them. Forty thousand birds were examined by farmers during demonstrations and 14,500 were discarded as culls.

Showing that the work of culling out the low egg yielders is profitable, the records indicate that the remaining birds, or those retained as showing the marks of good producers, laid as many eggs as the entire number had laid prior to the culling. Therefore, the feed bill for these farmers was cut one-third without decreasing the output. The saving in feed was estimated at \$310,000.

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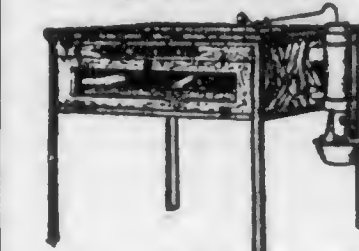


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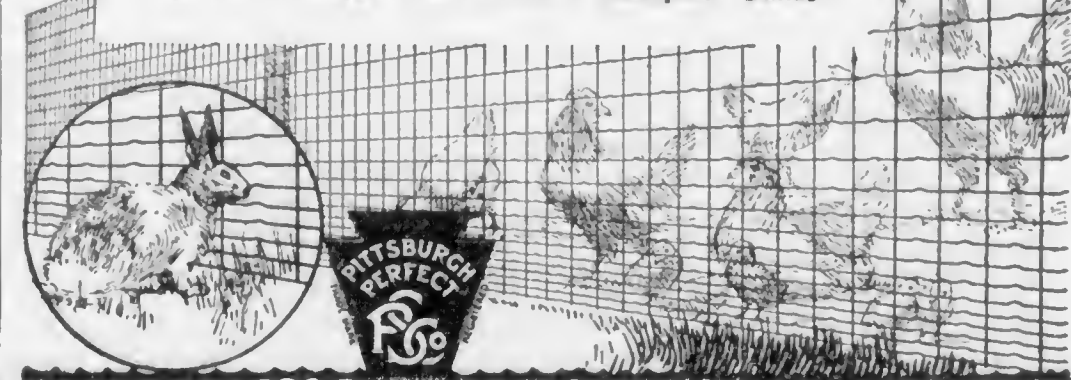
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Farm Labor—A Social Survey

(Continued from Last Week).

Certain farmers have arbitrarily paid their best men from 15 to 25 per cent more than their basic pay. Contrary to general opinion, it has not caused any difficulty. If possible the man of special ability should be given special duties to perform and these duties should be suggested in the name of his position such as mechanic, truck driver, tractor driver, or orchard man. This raises him above the position of the hired hand. No evidence was found where the low wages seemed to be a particularly good business investment. Where sufficient wage was paid to secure a better farmhand, the increased efficiency seemed to more than offset the difference in wage. When it is considered that the difference between a poor and a good man is not more than \$300 a year and that a poor man by his lack of intelligence and judgment may produce \$500 worth of damage in one-half a day, it is very questionable whether the farmer uses good business methods in trying to secure the cheapest labor possible.

Recreation

The three most important factors which must be considered are wages, housing, and recreation. Recreation is as essential in the life of a normal person as food or a place to sleep. The complaint is often made by the farmer that the farmhand goes to the city where he can have moving picture shows and go to dances.

If it is recognized that the desire for recreation is a normal human instinct, it is perfectly natural that the farmhand should seek some form of recreation if none is made possible on the farm. We often wonder why the excitement of the city is attractive. From a standpoint of reason it would seem that people should be more satisfied in the country where living conditions are more healthful. Every person wishes to find expression and this can only be found thru the use of the senses, as experienced in such form as color, music, motion and sound. People enjoy the city because it is possible to experience sensations thru the sense faculties more than it is in the country. The human being enjoys a change and new experience. Nothing is so deadly as monotony. Recreation implies social contact with friends and other people. It is thru social contact that expression can be given. The farmer who assumes that his farmhand may be contented without recreation is building on a false assumption. It was surprising to find how little opportunity for recreation is offered to the average tenant farmhand. Thru the entire year, there are no gatherings of people in the community where the farmhands could feel that they were taking an active and interested part. No provision is made for social functions or activities and the opportunity for any kind of recreation is almost entirely absent.

Many farmers are prone to condemn the moving picture theatre in the small country towns. Towns of 5000 people only having a moving picture show twice a week and that held in a building which could not possibly meet the demand for seats. The farmers would be far more logical if they would stimulate the development of recreational centers and places of amusement in their immediate neighborhood rather than allowing their farmhands to become dissatisfied and go to the city in order to find recreation. It would be a wise policy to make it possible for tenant farmhands to attend a moving picture show or some form of gathering at least once or twice a month, even if the cost was borne by the farmer himself. A community spirit must be developed if the farmhand is expected to remain within the community. It is his inherent right to be able to meet other people and attend gatherings where he can come into close contact with others. Without this opportunity, the possibility of expression is decidedly limited. The farmers of the community should arrange at certain times of the year to have outdoor festivities where music would be furnished and some sort of entertainment given. These gatherings should be decidedly informal and given for the benefit of the farmhand and not of the farmer. The farmer has his opportunities for recreation and social intercourse thru other means. A suggestion in this regard might well be taken from the Blossom Festival held each year in the Santa Clara Valley in California. This festival celebrates the blossoming of the prune trees and gives an opportunity for all of the people for miles around to gather together for games and general recreation.

In tabulating the percentage of turn-over from year to year, it was found that approximately fifty per cent of the families where the entire income was furnished by the man, changed work from year to year. This is a very unfortunate and costly condition and one which should be carefully studied. In many cases the changes were made from one farm to another where there was no improvement in the conditions. It seemed that there was no reason for the change except for the sake of new surroundings. Evidently, it was an attempt to make up for lack of recreational and social conditions as found on the farm. The families where the children were grown and working in nearby industries seemed to be much more permanent. There seemed to be no choice in the permanency between colored and white labor.

It was found that a surprisingly large number of tenant farmhands owned phonographs. It was also surprising to find how little they were actually used. The main reason for their disuse was due to the small number of records which most of the families owned. After a record has been played over and over again the listeners become tired and the phonograph is neglected. Considering that so many of the farmhands own phonographs it would be very helpful if the farmers in the community would establish a phonograph record library in connection with the public library of the community, where it would be possible to exchange records very much the same as books are exchanged. The question of books and magazines is also quite important. The traveling library is now coming into vogue in many communities and is an excellent idea. Books and magazines are taken around from house to house by automobile. In many tenant houses there was not a single book with the exception of the Bible in the entire house. The women and the children would especially enjoy current magazines with illustrations.

even if they were a few months old. Arrangements should be made for distributing magazines and books among the tenant hands:

Use the Schools

More use can be made of the country schools as recreational and educational centers for the parents as well as the children. Gatherings of the parents in the school for entertainments and musicals should be stimulated. This would be of great assistance in helping to supply the lack of any recreational features. The school is the ideal place for gatherings, as it is usually centrally located and at all times available. Improvements should be installed so that the school houses could be used in the evenings. Unfortunately, among the farmers visited, there was practically no common interest in school, church or recreation between the farmer and the farmhands. It must be considered that the farmhand finds his opportunity of expression on the farm, just as much as the farmer and the farm which does not take into consideration his right of expression and make it possible for him to find something in life besides the monotony of working, eating and sleeping, does not meet its fundamental obligation to society. Industry has definitely recognized that it owes something more to its employee than the wage which he receives. The employee has reached the point where he is demanding more than mere wage. He is demanding opportunity of expression. If this opportunity cannot be found on the farm, which after all is the foundation of civilization, conditions are radically wrong. The life of the large percentage of farmhands is a sordid monotony of existence which allows for no opportunity of expression and seems to have no outlet. It is hard to imagine what could be more deadening than an existence where every cent of money is spent week by week with no recreational opportunity and no prospect of future conditions which will make anything else possible. Unfortunately, the attitude of the farmer is very often antagonistic to the welfare of the farmhands. This may be typified by an expression of a certain farmer in regard to this investigation, who remarked that "he would rather not have anyone talk to the farmhands, as it might start them to thinking." Unless the farmer can conduct his work with a sense of partnership with his employee and with the feeling that he is furnishing him with an opportunity for expression, there can be but little satisfaction in farming. Certainly, there is very little of the real spirit of Christianity present if that attitude is not taken. One farmer remarked that he would rather not farm, than feel that his farmhands were antagonistic toward him and did not enter into their work with a real spirit of interest. In passing, it may be remarked that this farmer furnished privileges amounting to over \$400 per year.

He paid his hands \$3 per week over the average wage and furnished them with tenant houses having running water and other improvements and built with an idea of being attractive, rather than merely habitable. His tenant hands were strikingly superior and in conversation with them it was possible to feel the sense of interest and co-operation which they took in the farm work.

In many cases complaints were

(Continued on Page 30).

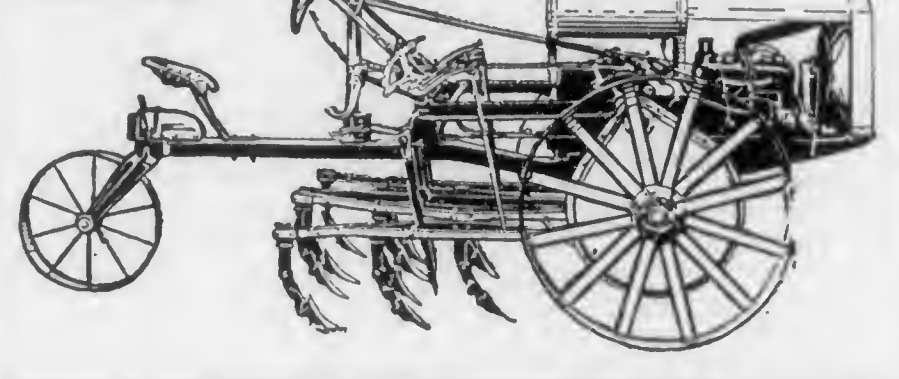
Cultivate With a TORO

This light, 2-row cultivator does thorough work at low cost

Farmers who have kept accurate records of crop-raising costs find that planting and cultivating per acre with a TORO costs about \$2.50, including depreciation. Doing this work with horses in the usual manner would cost around \$7 per acre—and this does not include keeping horses during

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Cultivator



Why the TORO does thorough work

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The TORO is the only power cultivator which steers by the front driving wheels. The drive wheels respond immediately to the steering gear, causing instant action of the gangs. This means the greatest possible flexibility in the field, and permits cultivating row crops in uneven hills with ease. It means less hoe work and better crops.

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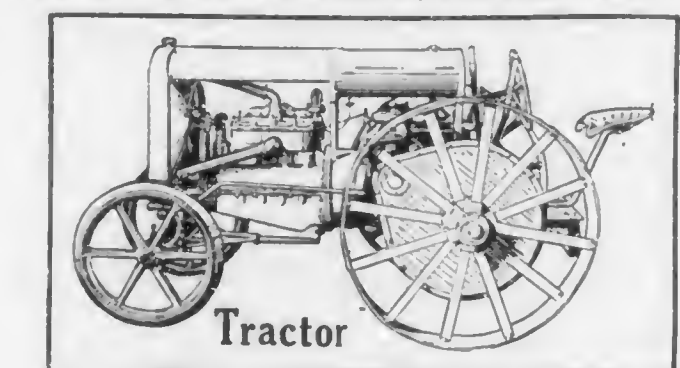
This small, low and light motor cultivator works close to fences and under trees in orchard tillage.

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Besides cultivating, the TORO is used for disk-ing, harrowing, drilling, planting, pulling the mower, hay loader, binder, manure spreader, road drag, etc. It has power enough to meet all the requirements of the average size farm. Standard unit design—frameless and compact.

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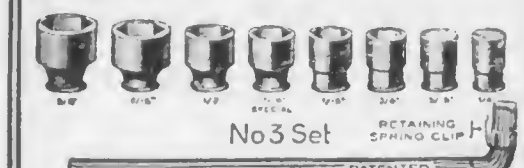


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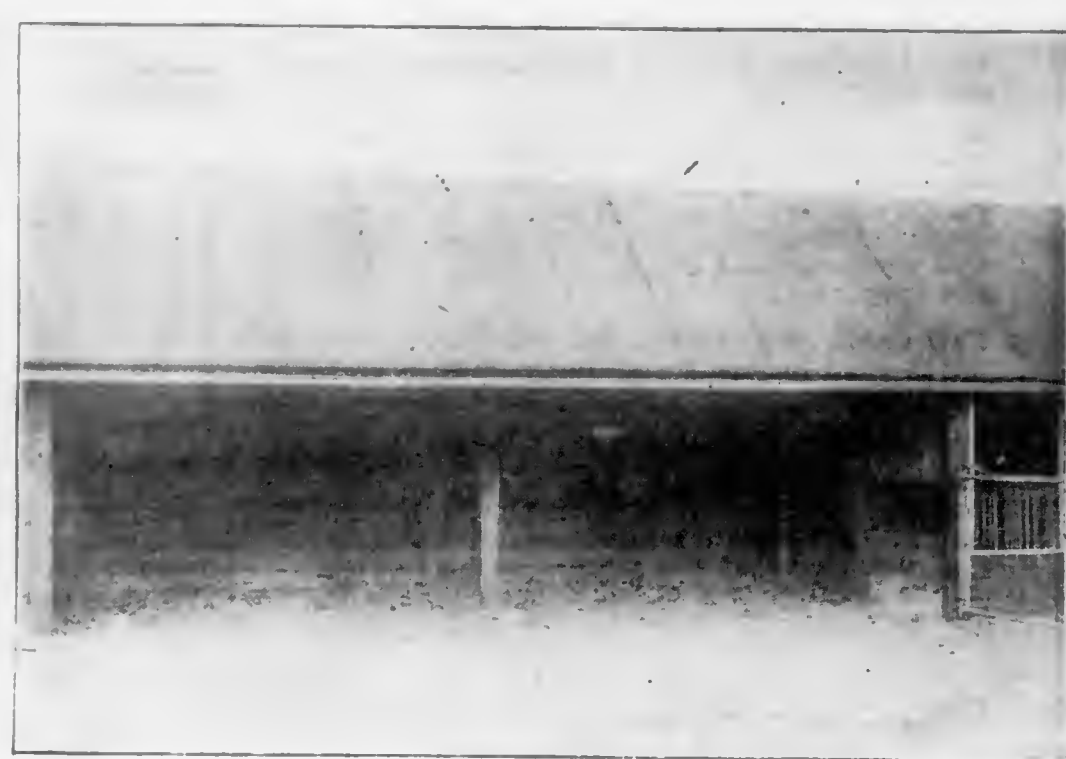
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The State Fair and Livestock Improvement

By W. H. TOMLHAYE

THE two questions frequently asked by visitors from outside the State of Pennsylvania are: "Where is the Pennsylvania State Fair held?" or "Why don't you have a State Fair?" To a newcomer in the state or to those not familiar with conditions in the state, it does seem strange that Pennsylvania does not have one of the largest and best fairs of any state in the Union. The same question arises in the minds of many people in the state who read about the wonderful fairs held annually in adjoining states. There seems to be no logical reason why there is no state fair in Pennsylvania and the only excuse seems to be that such an institution has never been established. This is due in part to the fact that in the minds of some people the agriculture of the state has been overshadowed by other industries and that a certain group of men have been opposed to the establishment of a State Fair for fear it would interfere with the progress and development of the local fairs. There is no justification for these arguments, as Pennsylvania's agriculture is of importance, which is borne out by the fact that the value of the ten leading crops produced in the state during the past year are valued at more than \$316,000,000. This does not include the value of farm animals, fruits, vegetables, poultry and dairy products that are produced within the state.



An Open Shed—Type Used for Dairy Stock at Pennsylvania State College

The live stock development in this country has been due to a number of different agencies. The work of the Live Stock Breeders' Associations, the Agricultural colleges, various local associations, the live stock papers and fairs have all contributed toward the development of the live stock industry. In those states where a successful state fair has been held the live stock improvement and development has been more rapid than in the states without a fair. Among the best illustrations of such states are Ohio, Iowa, Minnesota, California, Texas and many others. In each of these states the development of the agricultural resources and the live stock industry has been more

rapid than in Pennsylvania and a few of the states that do not have a "real" state fair. Practically every one of the leading agricultural states has a well established state fair that is the pride of the agricultural interests within these states. In nearly every instance where no state fair is held, some large district fair takes the place of the state fair. In many of the states throughout the middle and central west, several district fairs are held in addition to the state fair and in each case are well supported and benefitted because of the existence of the state fair.

Few people fully realize what a state fair would mean to Pennsylvania. It would afford an opportunity to exhibit the agricultural and live stock products of the state at one central point and thus make a comparison of the crops produced and progress made in the different localities. The farmers would have

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Price, complete, \$22 f.o.b. Chicago. Your dealer has it, or you can buy from us by sending \$2 with order and paying balance on arrival. Catalog No. 69 shows complete line of hand and power operated machines. Write for it.

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of 125 Purebred Berkshires on Tuesday, March 22, 1921

Masterpiece and Spring Meadow Longfellow Blood. This lot of pigs consists of 20 bred sows and gilts; a few sows with litter on day of sale; 25 open sows, 5 hours of good quality for service; a big number of suckling pigs. These pigs have been bred for size, quality, length and bone. Masterpiece blood has produced good bone and Loughfellow has given length—an excellent combination. Sale will be held on the farm of the undersigned—one mile east of Hunter Hill Station on the Lebanon and Tremont Branch of the Philadelphia and Reading Railway. Automobiles will meet trains leaving Lebanon at 8:15 A. M. and 1:30 P. M. Sale will commence at 1:30 P. M.

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Large Berkshire Swine

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REGISTERED DUROC PIGS—Orion blood line. Write A. L. METZLER, SOMERSET, PA., R. No. 4.

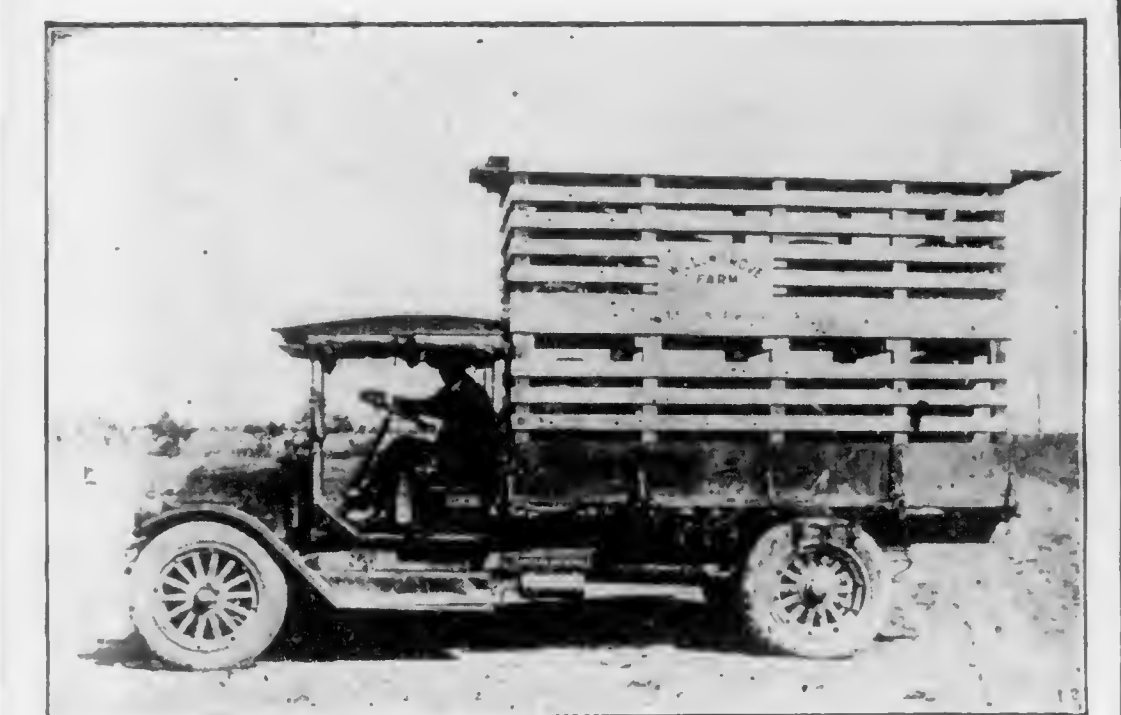
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REG. DUROCS—Large type Pigs, and March pigs. Bookings orders for April, May and June delivery. Best stock. A. S. Ellenberger, Warriors Mark, Pa.

PLEASE say: "I saw your adv. in Pennsylvania Farmer."

from the sections in which these fairs were held, went home and determined to breed better live stock and in a number of instances purchased pure bred sires or established pure bred herds or flocks. Pennsylvania farmers would not only have an opportunity to see the splendid exhibits of live stock, but would meet personally and become acquainted with the breeders who produce these herds and flocks. It would be an education that can only be gained by a personal contact with the people who can discuss these problems from personal experience. A visit to a great live stock show by the farm boys of the state and a personal talk with the live stock breeders would be a great inspiration to most boys and give them an idea of the field for live stock production.

Pennsylvania is the missing link of a big eastern fair circuit for the exhibition of live stock. A circuit composed of Ohio, Michigan, New York, Eastern States Exposition, Pennsylvania and Virginia would draw exhibits of all classes of live stock from the leading breeding establishments east of the Mississippi River. Many of the live stock breeders feel that the east is a new territory for the introduction of breeding animals and await the opportunity to show the farmers what they have accomplished.



A Truck Load of Hogs Worth \$19,000

Practically all the breed record associations would support a state fair by offering special premiums for live stock. All of the record associations are doing a great deal of breed extension and promotion work thru the national and state fairs. They bring to the farmers the information which they desire about the merits of the different breeds of live stock. Thru the work of the breed associations and the exhibits from the leading breeding establishments of the country, there would be brought to within easy reach of the farmers of the state the object lessons and best results of animal breeding in this country. For the farmers of Pennsylvania to make the trip to the Ohio State Fair or to the Eastern States exposition to see such exhibits is expensive and requires too much time. It is a matter of economy to establish a fair within the state where the people can have the same opportunity to see the live stock and other exhibits which are provided for the people of adjoining states.

There has recently been some agitation by the secretaries of county fairs in the state against the proposed state fair bill before the Legislature. Their contention is that a State Fair will reduce the attendance at county fairs and decrease the num-

ber of exhibits. This has not been the experience of the local fairs in other states. The state fair becomes a feeder for county fairs and gives local exhibitors ideas which will be put into practice when making up local exhibits. It serves as an inspiration to the county fair exhibitors and the local fair will profit by such examples. When the Eastern States Exposition was started at Springfield, Mass., in 1917, it was opposed by many of the local fair associations in Massachusetts and Connecticut. Their opposition was based on misinformation and a lack of knowledge of the benefits to be derived from a large exposition in close proximity to a local fair. They found that instead of injuring the local fair, it has stimulated interest taken in the fair by the management, visitors and exhibitors. The establishment of a state fair will have a healthy effect upon some of the local fairs of the state that are agricultural fairs only in name. It will make them pay more attention to developing the agricultural and live stock exhibits and give less attention to questionable side shows.

There is a new era at hand in the type of fair which the people demand. All fairs, local, state or national must become educational institutions if they are to survive. The days for side shows, cheap games of

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Invented by Jules Melotte, the Edison of Europe, the Belgium Melotte is the only single-bearing bowl separator ever made.

This patented bowl hangs from one frictionless ball bearing and spins like a top. It is self-balancing. It skims as perfectly after 15 years' use as when new. Positively can not ever get out of balance—cannot vibrate and thus cause cross currents which waste cream by re-mixing with the milk. The 600 lb. Melotte turns as easily as the 200 lb. machine of other makes. Spins for 25 minutes unless brake is applied. No other separator has or needs a brake. The Melotte bowl has solved the problem of perfect skimming.

Self Balancing Bowl

The Belgium Melotte is the only single-bearing bowl separator ever made. It skims as perfectly after 15 years' use as when new. Positively can not ever get out of balance—cannot vibrate and thus cause cross currents which waste cream by re-mixing with the milk. The 600 lb. Melotte turns as easily as the 200 lb. machine of other makes. Spins for 25 minutes unless brake is applied. No other separator has or needs a brake. The Melotte bowl has solved the problem of perfect skimming.

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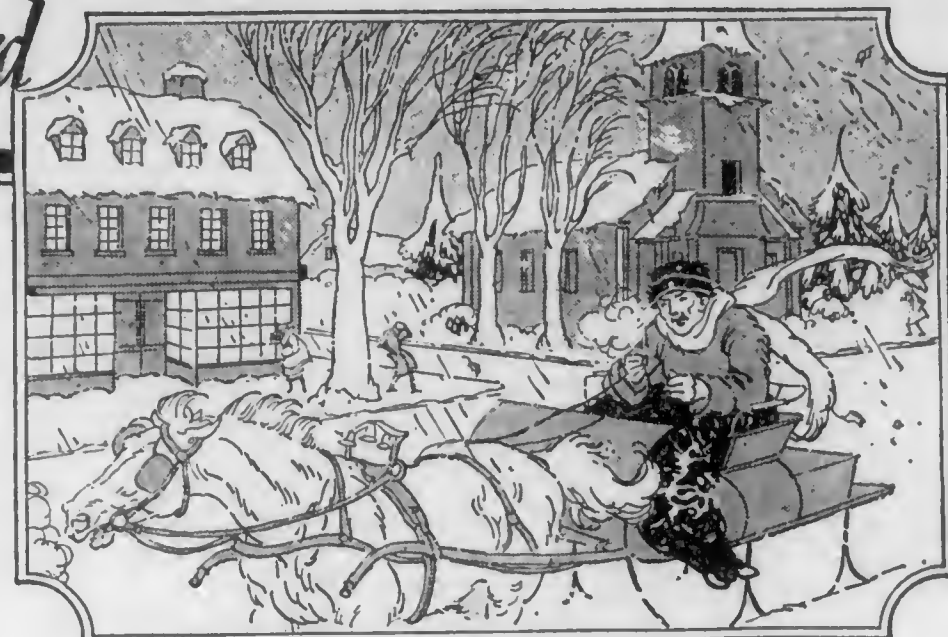
The storm was bad enough in the village, but when I reached open country I found it had settled down to a regular old-fashioned blizzard.

LAST winter I got sick and tired of having a house that was never really comfortable and warm. We were always wearing sweaters and coats and piling expensive coal on the fire, without seeming to do any good. So I looked around and finally bought an Andes System One Pipe Furnace.

We installed the whole furnace in about eight hours work and next day, in the morning, I built a fire in it. And that very afternoon along came the worst storm of the whole winter. It didn't amount to much at first, but by three o'clock we knew what we were in for. By the time I started home the storm seemed bad enough in the village. Those big elms down by the church were creaking and cracking in the wind. But when I reached open country, I found it had settled down to a regular old-fashioned blizzard.

Naturally I was worried about the people at home. There was that new Andes furnace that had never been tried out at all, and I just kept wondering whether I'd find them comfortable or freezing cold. I got there at last and stamped in the way you do when you come in out of a storm. And believe me I had a surprise waiting for me. That house was warmer than it had ever been before. It was great. It seemed just as if I had stepped into a patch of warm summer sunshine. Wife was smiling. Sister was smiling. I tell you it was a relief to find them there as cozy and warm as if they didn't even know there was a blizzard. I'll swear by the Andes now as long as I live.

One of the best things about an Andes just at this time of the year is the fact that it can be put in in one day. This is because there are no heat pipes to put in, so you avoid the cost, the confusion and the delay of ripping open floors and walls to put in the pipes. There is only one register hole to cut, and that is quickly done. Then, after you get the Andes in, you have first of all, the nicest,



"Those big elms down by the church were creaking and cracking in the wind."

most comfortable heat, and, equally as important, you have a furnace that saves fuel money. The Andes always saves fuel and sometimes cuts it down one-third or even one-half.

There are several reasons why the Andes is a fuel saver. One is that it has a "dead-air-space" type of inner casing which permits the circulation, on which the efficiency of a one pipe or pipeless furnace depends, to continue. Any other kind of inner casing slows down the circulation and makes you burn more coal while at the same time you get less heat.

People are constantly writing us such testimonials as this from Mr. E. F. Moody, Lebanon, N. H., a picture of whose house is shown on this page: "Gentlemen—last fall we installed your No. 240 One Pipe Furnace and have had no trouble in keeping nine rooms, heated to 70 degrees or over all winter on six tons of coal, which is less than it took to heat six rooms with stoves."

The Andes One Pipe water pans give the air in the home just the right amount of moisture to guard your health. It is a fact that a room heated to a temperature of 68° with moist air is more comfortable than a room at 75° with dry, burned air. It not only increases your comfort, therefore, to heat your home with Andes One Pipe moist air, but it also cuts down your coal bills.

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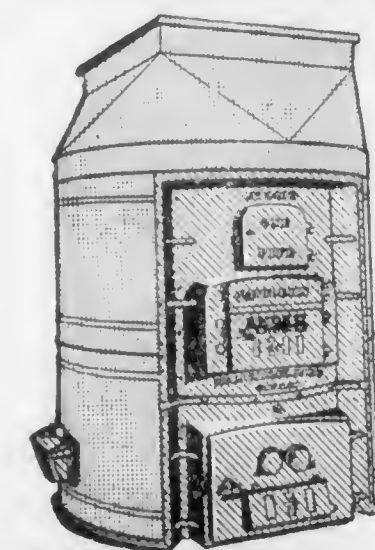
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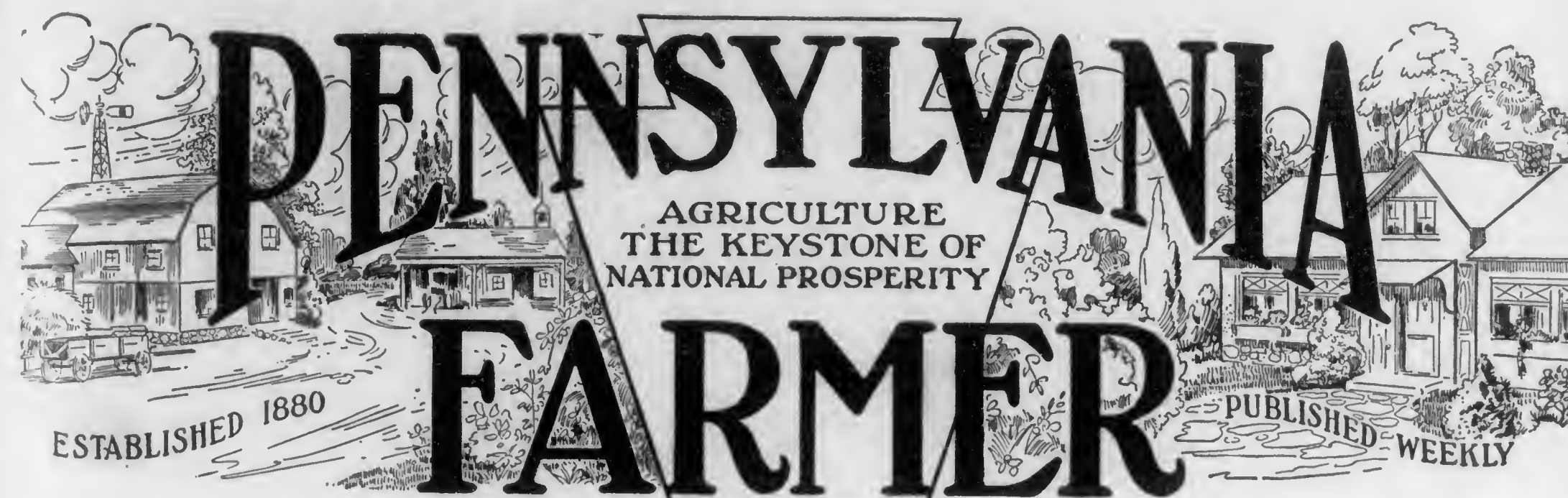
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The Ralston-Nolan Land Tax Bill

A Discussion of the Proposed Tax on Large Land Values

By S. HOWARD PATTERSON

Instructor in Economics, University of Pennsylvania.

Editor's Note—Because of the interest which farmers have taken in the Ralston-Nolan Bill we had the following article prepared by Professor Patterson. We believe it is an impartial discussion of the plan and will help to clear up many points upon which farmers have been doubtful. The bill will likely be re-introduced at the special session of Congress.

WHEN the Armistice was signed in November, 1918, the last chapter in the military history of the great war was closed. The financial problems arising from a world conflict remained unsolved. Each belligerent nation had a staggering load of debt and taxation. Statesmen talked glibly in terms of millions of men and of billions of dollars, whereas in former wars thousands of men and millions of dollars had been the units of measurement. The country had gasped when Congressional appropriations crossed the billion mark. The Secretary of the Treasury has estimated as the necessary income for the next fiscal year a sum between four and five billions of dollars. In Europe generations yet unborn will pay taxes on stupendous war debts. The other alternatives in some countries seem to be either national bankruptcy or the repudiation of their debts. In America the per capita debt, especially in proportion to our national wealth, is not so great. Although we are the world's creditor nation, one of the most popular issues at home today is the reduction of taxes. This financial burden is a veritable "Old Man of the Sea." The debt may be funded and passed on from generation to generation, but that is not disposing of it. It is not part of our problem to decide what portion of the debt should be paid by this generation and what part should be left to our children. In any case we must look forward to a continued high rate of taxation. This is our first premise and one frequently ignored because of its unpopularity. The paper must be paid although we may quarrel as to the method of payment.

"The tariff a local issue" was made the presidential campaign slogan of a generation ago. The same might be said of taxation. Various individuals are vigorously agitating for the repeal of certain taxes which they find oppressive—that is which hit them. They feel that the industrial prosperity of the country will be furthered by other kinds of taxes the final burden of which seems to lie in another direction. The political atmosphere is full of taxes and rumors of taxes.

On February the seventh, 1920, Mr. Nolan introduced into the House of Representatives a bill taxing large land values which was subsequently referred to the Ways and Means Committee. The

measure is technically known as House of Representatives Bill No. 12397 or more popularly as the Ralston-Nolan Bill. It proposes to "provide for the raising of public revenues by a tax upon the privileges of the use and enjoyment of lands of large value." The bill defines land in its true economic sense; that is, including all natural resources and excluding all improvements, which represent labor and capital. "That for the purposes of this Act land is defined to be the surface of the ground, with all easements in, on, and over the same whether covered by water or not, and including water powers and rights, natural growths, if any, of land and including wild forests, natural deposits of coal, minerals of all kinds, oils, gases, peats, waters and all other substances and not including the improvements the result in whole or in part of the application of labor to land." The rate of taxation is one per cent upon all land values in excess of ten thousand dollars. "That all persons, firms, associations and corporations owning land in excess of

ministration and the enforcement of the act.

Let us see what this proposed law would mean. Suppose Mr. Brown owns a farm worth thirty-five thousand dollars. Let us assume his house, barn, shed, fences and other improvements or capital to be worth ten thousand dollars. This would make the value of the land itself twenty-five thousand dollars. As there is an exemption feature of ten thousand dollars Mr. Brown would have to pay a tax upon fifteen thousand dollars worth of unimproved land value. At one per cent his yearly tax bill under this law would be one hundred and fifty dollars. It must be remembered, however, that this tax is a new federal tax independent of and in addition to the existing local or general property tax, which covers buildings as well as land value.

It is estimated that the Ralston-Nolan Bill will yield an annual revenue of one billion dollars or one-fourth of the total needs. It represents the invasion of a new field by federal taxation. The general property tax in this country is usually regarded as within the sphere of the local governments of the individual states. It required a special amendment to our Federal Constitution to give Congress the power "to lay and collect taxes on incomes from whatever source derived without apportionment among the several states and without regard to any census or enumeration." From an economic point of view the differentiation between land itself and the improvements upon it is very important. Unimproved land including all natural resources is a distinct element in production from the improvements upon land which are the result of labor and represent a third element, namely capital. This theoretical distinction is beset with certain practical difficulties. Improvements upon land are of such a permanent nature that they tend to become part of the land. Witness the labor expended in clearing or draining a piece of land for farming. Shall we say that a stream is a natural resource but that an irrigation ditch of the same size is capital? How can fertilizer be classified? The practical difficulties of differentiating between land itself and the improvements upon it are great. City real estate assessors find it difficult to apportion the value of a building between the value of the building itself and the site or land value.

It would seem that the small farmer would hate little to fear. The advocates of the Ralston-Nolan Bill estimate that ninety per cent of the farmers of the country would be untouched. The measure is designed to hit at large holdings (Continued on Page Four).



Subsidizing The Rural School

What a System of State Aid Has Done for Minnesota.—By R. P. Crawford

NOTE—This is the second of a series of articles by Mr. Crawford on Consolidated Schools. The third, "Remaking Rural Communities," will appear in an early issue.

MINNESOTA has plenty of money for its rural schools and believes in spending it. Nearly everywhere one goes in that state he finds consolidated schools. There is probably no state in the Union that has handled the financial problems of the consolidated school as well as has the State of Minnesota. The requirements which every consolidated school must live up to are probably also the highest of any in the Union. The state has all sorts of subsidies for its consolidated schools, such as consolidated school aid, transportation aid, state graded aid, high school aid, and the apportionment of the current school fund.

If one did not know this, he might indeed wonder how Minnesota has made such great strides in consolidation. Even in the most northern parts of the state are good consolidated schools, and I recall that there is one such school only a comparatively few miles from Red Lake, and fifteen miles from the nearest railroad. In dozens of villages in that state the schoolhouse is the only building in town that has a water-works system. Such vigorous oversight is given the schools of Minnesota that no school is permitted to erect a consolidated building without having the plans approved by the State Department, and without having an entirely modern building. The requirements for consolidated schools include everything from approving the proposed districts to requiring that every school serve a hot lunch during the winter months. Minnesota can make these regulations because it gives the schools state aid, and thereby has a lever to make them live up to certain definite requirements.

Before any consolidated school can be established in Minnesota, the county superintendent must make a plan showing the territory it is proposed to consolidate, the location of the school and all other available information. The State Department can approve or reject the consolidation. This does away with the possibility of some section being left without a consolidated school when it should be in a consolidation. Twenty-five per cent of the voters of each district that it is proposed to consolidate must petition for the school to the county superintendent. All districts then vote together at an election. If the majority of the votes of all districts are in favor of consolidation, the question carries. That means that one section cannot hang back and so defeat a good school which is favored by nearly everybody else. However, the interests of the individual districts are safeguarded by the fact that 25 per cent of the voters in every district must have previously petitioned for the consolidation.

Lessons From Experience

On the occasion of my visit to Minnesota, I asked an official of the state department there to give some good advice from that state's experience with consolidated schools. As a general thing, the state department does not believe that a consolidated school should be established with less than 100 pupils. The consolidated schools over the state average about 150 pupils. It is believed that at least four teachers should be employed for the grades and two for the high school, and that is almost impossible with fewer than 100 pupils. Of course, there are cases where communities may be isolated, where it is impossible to have 100 pupils, and in such cases, the proposed school may be approved.

As a general thing, the state department fa-

vors a two-story brick building. Three-story buildings are frowned upon. A requirement in a consolidated school is that every school must have an auditorium. Of course, in some of the smaller schools two classrooms may be arranged so they may be opened to form an auditorium, but the larger buildings usually have the auditorium entirely separate. Every building must be entirely



One of the Finest Country Schools in the United States, near Minneapolis

modern with the right kind of light, modern toilets, ventilation, steam heat, and drinking fountains on every floor.

It is interesting to note that each consolidated school receives yearly from the state \$2,000 with which to transport pupils and three-fourths of such an amount beyond \$2,000 as is expended for transportation.

No school, however, can receive more than \$4,000 from the state for transportation expense. It will be seen that one of the arguments against consolidation is done away with in Minnesota, because the state gives a great deal of money outright for transporting pupils. In addition, each school receives \$2,000 when a building is first erected. Truly, it may be said that probably no state in the Union has done more for the consolidated school than has Minnesota.

As a general rule, thirty sections are regarded as a reasonable area for a consolidation and the buses should not be required to haul any children any farther than five miles. Twelve sections are the minimum for consolidation except where a town is included. Generally, some logical center for a school is selected. It may be near a country store or creamery, or anywhere that people are accustomed to meet. If a village is within reasonable distance of most of the pupils, it is so much the better.

Perhaps one of the finest buildings for a consolidated school is the one known as the Bloom-

ington School about six miles from Minneapolis. It was erected two years ago at a cost of \$100,000 and is located right out in the open country on a site of eighteen acres. There are a few stores and houses at a cross-roads nearby, but they do not even constitute a post office. The building is a two-story brick of fireproof construction, 222 feet long and 53 feet wide. At each end of the building there is a one-story wing, one of them being taken up with an auditorium and the other with a science laboratory and a manual training room. The country surrounding the school is a very prosperous farming community, such as is found near any big city, and the farms are probably smaller than the average. The district comprises twenty-two sections. Five

old schoolhouses were discarded and now no one would think of going back to the old plan. The school has around 200 pupils and it has been made large enough to accommodate a much larger number as the community grows. In fact, it is generally the experience that a consolidated school increases the number of school children in the community. Many who have never thought of attending high school readily change their minds when they have a good building right at hand.

A person who is accustomed to only the little one-room schoolhouse would be astonished at the character of this building. In fact, it puts to shame most of the school buildings in ordinary cities. The school has a double system of heating, the same as most of the larger buildings in Minnesota. This includes the ordinary steam radiators and also the vacuum system. The latter is built on the most approved lines, the air being brought into the basement, washed by being forced thru tiny jets of water, and heated by steam coils and then forced into the rooms. In ordinary weather, this system alone is used, but in very cold weather it can be reinforced by using the radiators also. At each end of the building there is an electric motor which pumps the foul air out of the building. The temperatures in the individual rooms are controlled by thermostats. The school has its own water system of course, but electricity is secured from a transmission line out of Minneapolis. There is a vacuum cleaning plant in the basement with connections throughout the building so that all the dirt can be sucked down into the basement. Gas for operating the stoves in the domestic science room is piped from a tank outside of the building. In fact, there is nothing missing to make a completely equipped school.

Both upstairs and down are wide hallways between the various rooms opening off at the sides. At one end of the main floor is a combined gymnasium and auditorium. At this end of the building there is an entrance to a small box office window at the door. This part of the building is entirely separate from the rest of the school, altho there are doors also opening into the main hallway on the lower floor. Farmers' meetings may thus be held without interfering at all with the work of the school.

In the one-story section of the building at the opposite end are located the manual training shops and science laboratories. There is also a conservatory opening out of this end of the building with glass on three sides. Here agricultural experiments are carried on during the cold weather. On either side of the main hallway are the grade schoolrooms. Upstairs there is a fine study hall for the high school, besides recitation and classrooms. There is also a suite of rooms for the domestic science department and a teachers' rest room which is also used for taking care of any of the children that become sick at school. The eighteen acres afford plenty of room for agricultural experiments, an athletic field and

playground.

Schools in Cut-over Lands

Many schools equal to the one I have just described can be found in the rural sections of Minnesota. But lest the reader might be of the opinion that I am describing schools existing under unusually favorable conditions, we shall take a little trip to the northern part of the state and see how the schools fare in the more sparsely settled sections. A day's journey brings us to the lake country of Minnesota, about 200 miles northwest of Minneapolis. This is a great country for tourists in the summer, but by late fall most of them have journeyed to warmer climates.

(Continued on Page 11).



A Less Elaborate Consolidated School in Renville County, North Dakota

ington School about six miles from Minneapolis. It was erected two years ago at a cost of \$100,000 and is located right out in the open country on a site of eighteen acres. There are a few stores and houses at a cross-roads nearby, but they do not even constitute a post office. The building is a two-story brick of fireproof construction, 222 feet long and 53 feet wide. At each end of the building there is a one-story wing, one of them being taken up with an auditorium and the other with a science laboratory and a manual training room. The country surrounding the school is a very prosperous farming community, such as is found near any big city, and the farms are probably smaller than the average. The district comprises twenty-two sections. Five

Soils and Fertilizers

Conducted by Dr. J. G. Lipman

Our readers are invited to send us their problems on soils and fertilizers and they will be answered by Dr. Lipman in this column.

Growing Alfalfa

Please give me some information in regards to alfalfa growing. I have a field of four acres which is in sod at present. Will plow it this spring. When would you advise to sow, and how much to the acre? There are wire worms in this field. What fertilizer would you advise?—A. B. S. Lancaster Co., Pa.

Successful growing of alfalfa calls for the scrupulous consideration of the following points:

1. Alfalfa will not succeed on land that is not well drained.
2. The soil must be well supplied with lime.
3. Available phosphoric acid must be furnished and on sandy and gravelly soils also potash.
4. The seed bed should be carefully prepared in order that the weed seeds may be sprouted and destroyed and a good tilth secured.

Particular attention should be paid to the source of the alfalfa seed. Preference should be given to seed grown in Kansas, Montana, Idaho or Utah.

The seed or soil should be inoculated with bacteria that will produce nodules on alfalfa roots.

Under your conditions the land should be plowed as early as possible this spring. The crop to be grown may consist of oats or oats and Canada field peas for forage purposes, or early potatoes if your land is suitable for potatoes. Any of these crops would do to precede alfalfa. After the oats and Canada field peas are harvested in July the land should be plowed at once and summer fallowed until about the middle of August. Lime should then be broadcasted and harrowed in. For heavy land burned and slaked lime equivalent to 2000 to 2500 pounds of freshly burned lime per acre should be used. For medium and lighter soils ground limestone at the rate of two tons per acre would be preferable. After the lime is thoroughly worked into the soil acid phosphate at the rate of 300 to 500 pounds per acre should be applied. For gravelly soils or for sandy loams the addition of 50 to 100 pounds of muriate of potash per acre would also be desirable. The alfalfa seed should be sown at the rate of about 25 pounds per acre. A wheelbarrow seeder is most commonly used for sowing alfalfa. One-

half of the seed is sown in one direction and the other half in the other direction, so as to secure the best distribution.

Prior to sowing the seed it should be inoculated either with a commercial culture of alfalfa bacteria or with liquid obtained by stirring alfalfa soil in a barrel partly filled with water and then mixing the seed with this liquid, drying it and sowing. If soil from an alfalfa field in the neighborhood is available, it may be broadcasted and harrowed in at the rate of 300 to 500 pounds per acre. The soil from well established alfalfa fields, as is well known contains the alfalfa bacteria, and the land may therefore be inoculated by broadcasting alfalfa soil. Where this is not available, commercial cultures may be used as suggested. Directions for using such cultures are found on the containers in which they are sold.

By following this procedure and working the land carefully during the interval between the harvesting of the oats and the sowing of the alfalfa between August 15th and 20th, weeds and troublesome insects may be, to a large extent, eliminated, and enough nitrates accumulated in the soil to help give the young alfalfa plants a good start.

Planting Potatoes on Clover Sod

I have ten acres of clover sod which I want to plant to potatoes this spring. Am planning on letting the clover grow until about June first so

as to have a heavy growth to plow under. Will it be better for me to plow under the standing clover or to cut it first, let it cure, and then plow it under? Why does soil turn sour when clover is turned under without cutting it first?—E. P. D., Carbon County, Pa.

The possible advantage from allowing the clover to grow until early June would be the accumulation of a greater amount of humus and of nitrogen. The difference in so far as nitrogen is concerned is not as great as it may seem, for the clover accumulates a large proportion of its nitrogen while it is still young. In other words, clover two weeks before blossoming is relatively richer in nitrogen than at blossoming time, while at blossoming time it is relatively richer than it is two weeks after blossoming. Hence, from the standpoint of increasing the supply of nitrogen in the soil, the difference from plowing under the crop May 20th to June 1st would not be as great as it may seem. On the other hand, where the clover is allowed to grow until the 8th or 10th of June, the soil may not be in as good condition, especially in a dry season, as it would be when plowed earlier in the season. All told, it would be to your advantage to plow the clover before the end of May. If possible, a light coat of manure should be spread on the clover before it is plowed under.

It is probable that green clover, or any other green crop, when plowed under will temporarily sour the soil. This sourness, as shown by actual tests, disappears in a relatively short time. It would be safe to plant the potatoes within a week after a heavy crop of green clover is plowed under. If the stand of clover is light or when the plants are small, the potato crop might be planted within three or four days after the clover is plowed under and the land carefully prepared for planting. When the clover is cut and then allowed to cure before it is plowed under, the amount of acid temporarily accumulated in the soil will not



Farm of I. W. Wilson, Huntingdon County, Pennsylvania

be as great. It is probable that the best results would be obtained by you if you broadcast three or four tons of well-rotted manure per acre on the clover toward the end of May, plow your field and thoroughly fit it. Commercial fertilizer, containing about 3 per cent of ammonia, 10 per cent of phosphoric acid and 3 to 5 per cent of potash, should then be applied at the rate of about 1000 pounds per acre. By following this method you will be certain in any ordinary season of a good crop of potatoes.

Marl Versus Burned Lime

In a fertilizer mixture for general crops how does 20 to 23 per cent double manure salts at \$2.50 per 100 pounds compare in value to muriate of potash at \$6.00 per 100 pounds? On a basis of \$10.00 delivered at railway station how does marl lime compare with other lime? Some claim that marl is superior to burned lime and safer to use, especially on wheat and grass. What would you advise for soiling in oats? I had intended using alskike and red clover but my land is rather deficient in lime.—Pennsylvania Subscriber.

If the potash salts referred to are to be used in mixtures for general farm crops, the double manure salts would be fully as satisfactory in their action as the muriate of potash. At the prices quoted the double manure salts will give you the potash at a somewhat lower figure than will the muriate. You will have other salts in

the former that would cost you nothing. Hence, for grass and corn preference would, without question, be given to the double manure salts at the price quoted except insofar as you may have a long haul from your freight station and the cost of hauling and handling would more than offset the somewhat lower price.

Marl lime delivered at \$10 per ton is relatively expensive as compared with other forms of lime. Marl lime of good quality contains about 50 per cent of actual lime, or about the same as is contained in raw ground limestone of good quality. There is a considerable range in the prices quoted on ground limestone. For instance, a Syracuse, N. Y., company quotes \$2.75 per ton bulk f. o. b. its plant. A Michigan company quotes \$4 per ton f. o. b. Buffalo, N. Y. A New Jersey company quotes \$4.50 per ton and a Philadelphia firm quotes \$3.50 per ton f. o. b. its plant. These figures, taken at random, will show that ground limestone, with freight rates included, would cost less than marl lime at \$10 per ton delivered. It is to be remembered that freshly burned lime or lump lime will contain 90 to 95 per cent of actual lime and hydrated lime will contain from 55 up to 75 per cent of actual lime. As to the action on grass when equivalent amounts are used, there is not ordinarily much difference observed from different applications of different kinds of lime. The only exception to be noted in this case is burned or slaked lime derived from magnesium limestone. Where large amounts of such burned and slaked lime are used damage may be done to crops. On the other hand, marl lime or ground limestone may be used in very large amounts without any danger of injury.

Alskike clover will stand a greater degree of acidity in the soil than will red clover. The latter will stand more acidity than alfalfa. If your soil is badly in need of lime, even alskike might not thrive. However, it would be safer to use than either red clover or alfalfa. If lime can be used before the oats are sown, it may pay to employ a mixture of alfalfa, alskike and red clover.

Salt on Certain Soils

In your issue of Feb. 26, 1921, Dr. Lipman had an article on the value of salt on land. I would like to have him advise how much to use on the different kinds of soil—clay, clay loam, gravelly loam and sandy loam. I want to use salt to kill Canada thistles and quack grass. What can be done to the soil to make it productive again?—T. M. R. Armstrong Co., Pa.

The heavier soils will stand more salt without injury, while the lighter soils will show the injurious effect from large applications of salt more quickly. On the other hand, the excess of salt is more readily washed out of sandy soils than it is from the heavier soils. Ordinarily, applications of salt at the rate of 150 to 200 pounds per acre in the case of grass, corn, etc., will be the maximum. Even these amounts might cause damage if applied in the row. However, when thoroughly broadcasted, 150 pounds of common salt per acre may be used on the heavier soils with benefit to the grass and to other crops where the land shows response to applications of potash. It should be remembered that land which responds to applications of potash could be made to yield up a large quantity of available potash to the crop when moderate amounts of common salt are used.

Where salt is used for the purpose of exterminating weeds and soil-infesting insects, relatively large amounts will have to be employed. For sandy soils as little as 2000 to 2500 pounds per acre may prove to be sufficient. For heavier soils amounts up to three tons per acre may be used to destroy Canada thistle, quack grass, wire worms, etc. With applications of salt as large as those given the land will remain unproductive for several years, for it will take some time to wash out the excess of salt and to restore the texture, which is more or less injuriously affected when large quantities of salt are used on clay soils and clay loams. Deep plowing, the addition of manure and thorough tillage will offset the injurious effect of the salt.—J. G. Lipman.

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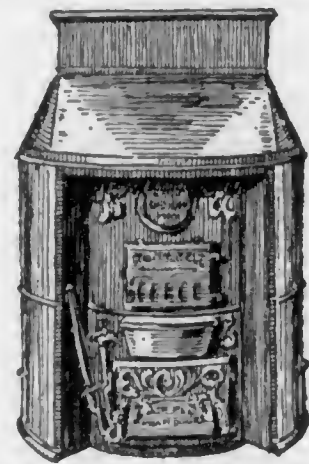
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The Ralston-Nolan Land Tax Bill

(Continued from Page One).

of our natural resources which are frequently alleged to be under monopolistic control. It seeks to prevent speculation in land values. The bill makes no distinction between idle land and that in use. Indeed one of its avowed objects is to tax idle natural resources and productive land held out of cultivation and thus to force it into use. Such a tax would also discourage large holdings in favor of the smaller. Such forms of taxation are not new to the American farmer nor is he as hostile to such proposals as is frequently alleged. The Farmers' National Congress at its annual convention in Indianapolis in October of 1916 adopted the following: "Resolved that this Congress view with alarm the increase in farm tenancy, recommends that the several states adopt a gradual land tax adapted to their peculiar conditions in order to promote more and better farm homes, farm citizenship and country life in general." The National Grange at its annual convention in Washington endorsed the so-called Crosser Bill, introduced before a former session of Congress with somewhat similar aims. The Farmers' Non-Partisan League of North Dakota, which elected a Single Tax Governor, had a land value tax in its platform.

There are certain economic principles contained in the Ralston-Nolan Bill which require examination. In the first place a tax on land values is a direct tax. A tax upon economic rent cannot be shifted. It is the opinion of most economists that such a tax cannot be passed on to the tenant, nor can its final burden rest upon the consumer in the form of higher food prices. Rent in its economic sense is due to the superior productivity or location of various pieces of land. If one acre of ground equally accessible to markets will produce with the same amount of labor and capital an average yield of ten dollars' worth more of potatoes than another acre of land it will yield ten dollars more in rent to its owner. If the rents paid for different pieces of land afford an accurate measure of their varying degrees of productivity the tenant is already paying what the land is worth. He cannot and will not pay more rent because of the new tax, provided there is no change in the value of his land due to other economic conditions. A general attempt to shift the tax in the form of higher rents will bring poorer sites and hitherto uncultivated land into operation. They tend to fix prices of commodities, for rent due to superior qualities of certain pieces of land is in the nature of a surplus going to the fortunate owners. Unless there is some other economic cause a tax upon land values cannot be shifted by the owner to the renter or to the consumer in the form of higher food prices.

If a tax upon land values is permanent it cannot be shifted to the next purchaser, because he will discount the value of the property by the value of the tax. Suppose a piece of farm land to be yielding a rent of six thousand dollars. Capitalized at six per cent its value would be one hundred thousand dollars. If a one per cent tax is placed upon it this would be one thousand dollars a year. The rent must remain six thousand dollars, for we have attempted to show that a tax on land value cannot raise rent. The yearly

income from this piece of land is now only five thousand dollars (six thousand and rent, minus one thousand dollars tax). Capitalizing his now diminished income of five thousand dollars at the same rate of six per cent the investment value of the same farm is but eighty-three and a third thousand dollars. No future buyer will pay more than that sum because of the new tax. By becoming a silent partner to the extent of one per cent in all the future earnings of the given piece of land the government at one stroke has taken sixteen and two-thirds thousand dollars from its investment value.

It may be asked if this does not amount to something like confiscation. The answer depends upon one's theory of taxation. Of these theories there are many, as for example, the ability-to-pay theory, of which the income tax is supposed to be an illustration. Another is special privilege theory, by which an individual should contribute to society in proportion to the special privileges he enjoys. Is the ownership of land and other natural resources a special privilege? Single taxers reaffirm that "the earth is the Lord's and the fulness thereof." They lament the appropriation of large tracts of land and the seizure of especially valuable natural resource by private individuals. The owners should at least contribute in taxes in proportion to their ownership of those natural resources such as land, which rightfully belong to society in general. Thus, a tax upon land values is defended by the so-called special privilege theory of taxation. Whether just or unjust, however, society has given its assent for centuries to the private ownership of land. An individual with one hundred thousand dollars invested in a piece of unimproved land would find sixteen and two-thirds thousand dollars sliced off the value of his investment by such a tax on land values as the proposed Ralston-Nolan Bill. A similar sum invested in a mortgage would be untouched by that law. It must be remembered, however, that there are other laws which have precisely the same effect upon the value of securities. The income tax has sliced similarly the investment values of stocks and bonds to most owners. In some cases the surtaxes by taking a greater proportion of the income have reduced the investment value of securities to a far greater extent.

The Ralston-Nolan Bill proposes to tax all unimproved land values whether agricultural or not. Our same line of economic reasoning applies to coal and mineral lands as well as to farm land. It is the same principle of economic rent—the superior values of different pieces of land whether useful in producing potatoes or coal. In general such a tax cannot be shifted. Suppose, however, a monopoly exists. Cannot the consumer be made to pay a higher price for the product? A monopoly presumes such a control over supply as to permit price fixing. A monopoly fixes its price at that point where the profit is greatest. This is frequently, but not necessarily a high price. Experience may have shown that a higher price means fewer sales and that higher profits may come with more sales at a lower price. If with more sales a monopoly price is probably already fixed at that point at which the profit is the greatest. If such is the case it will be a loss to the monopoly to try to raise the

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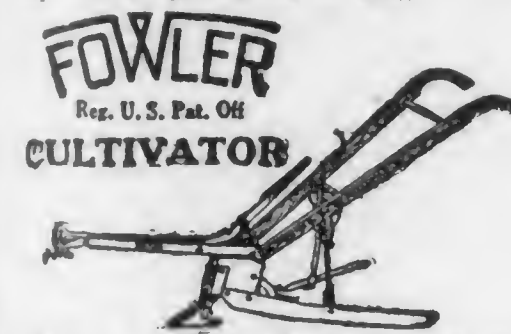
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price, for the sales will be decreased and profits will fall off. Hence a tax upon monopoly profits cannot be shifted. Moreover, a tax upon land values would tend to make it unprofitable to keep productive land idle. By bringing it into use monopoly control might even be broken. An increased supply of products resulting from the use of hitherto uncultivated land would tend to bring down the prices of the products.

A great English economist, Mr. J. A. Hobson, in his recent book, "Taxation in the New State," has recast the whole philosophy of taxation. He tries to analyze more closely the so-called ability to pay. Mr. Hobson would draw a line between costs of production, which are incapable of bearing taxation and "surplus" wealth, out of which all taxes must eventually come. Under "surplus" wealth he would include among other things excessive or monopoly profits, inherited wealth and economic rent, which we have seen is based upon unimproved land values.

A tax which bears upon the cost of production is either immediately shifted or else curtails production, raises prices and is finally shifted. Many of our war taxes which bore upon industry hit the cost of production and hence were shifted. The final burden was frequently hard to trace in its devious course, but it sometimes gathered in size like the proverbial snow ball. A tax upon commodities is the classic illustration of an indirect tax shifted to consumers. During the war everything in sight was taxed from silk shirts to spectacles. Part of the agitation today over the revision of taxes is due to the failure to study the location of the final burden of the various taxes imposed. The principle of taxation during the war was that of the drunken Irishman at the country fair, "Every time you see a head hit it." The only defense of such a system is that money was raised in a quick way to help win the war. Now that the conflict is over it is surely time, to paraphrase the words of the walrus, to stop talking in incoherent terms of "ships and shoes and sealing wax, of cabbages and kings." The entire theory of taxation must be reviewed and some guiding principles adopted. Thus a tax must be proportionate to one's ability to pay and we must know where the final burden rests if we expect to escape the pernicious shifting of taxes. The Ralston-Nolan Bill will place its burden upon the large holders of land and natural resources. It will be unfair if it taxes one form of wealth, namely land values, out of proportion to other forms of wealth equally capable of bearing taxation. The social effects will be beneficial in so far as speculation in land is discouraged and idle land is brought under cultivation. The bill may tap monopoly profits, but it is sure in any case to raise an enormous revenue to help defray our war debts.

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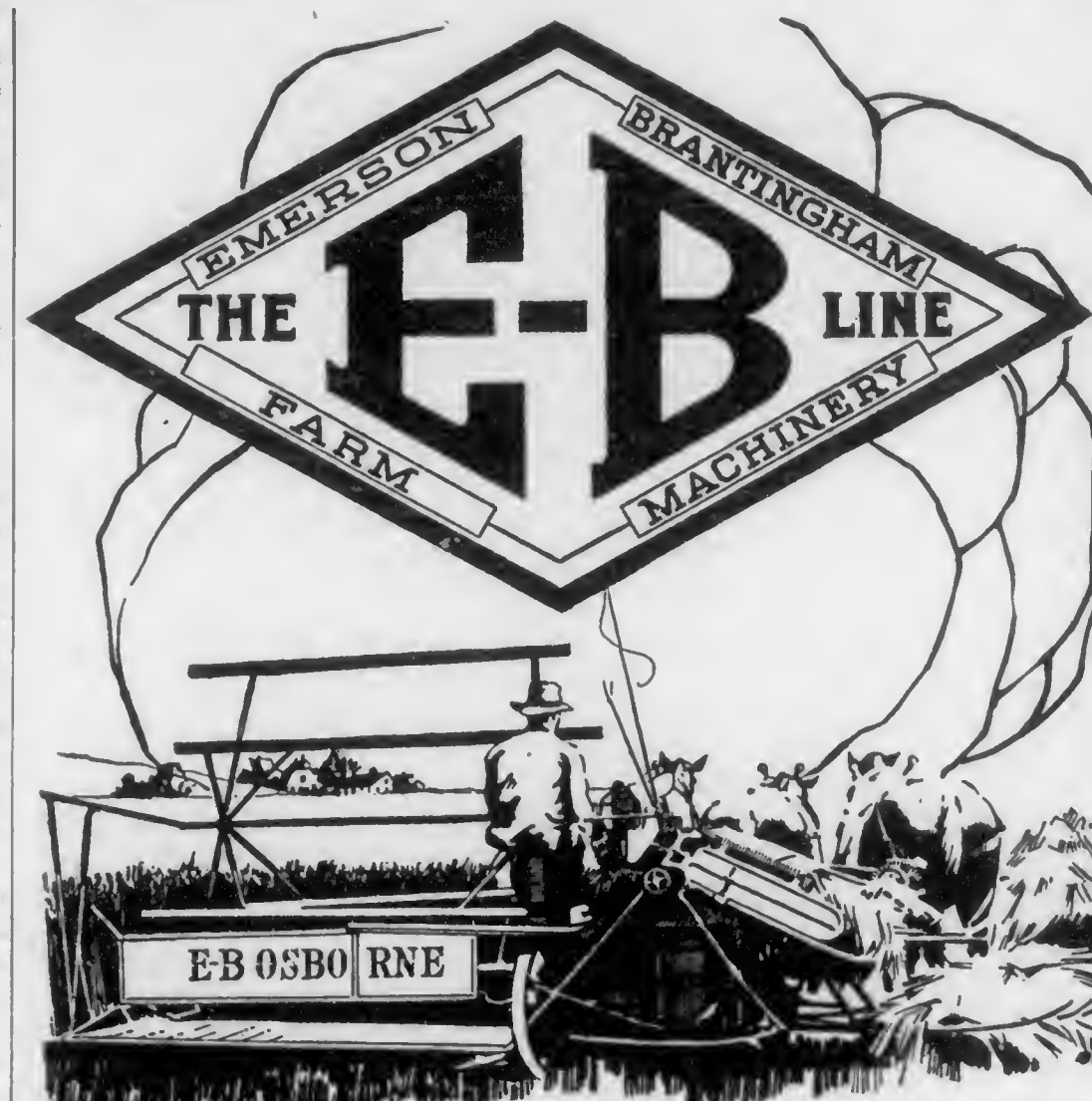
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LOOSE BUSINESS

A county in an eastern state recently furnished a fine example of how not to do business. The purchasing agent for the Farm Bureau got a car of lime without having his commission fixed. Disputes arose and it required care to make satisfactory adjustments.

Moral: All matters of commission should be settled in advance.

Economy makes happy homes and sound Nations.—George Washington.



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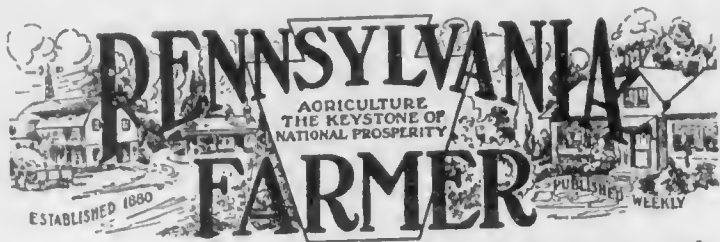
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PHILADELPHIA, PA., MARCH 26, 1921.

VOLUME 49

NUMBER 13

OUR JOB is to serve our readers. Whenever you are puzzled, write to us and we will help you if we can.

—The Editors

In the battle of life we cannot hire a substitute.

Study The Tax Bill

WE HOPE everyone interested in the subject of Federal taxes will read the article published on the first page of this issue. Without doubt the Nolan-Ralston Bill will come up for consideration at the special session of Congress next month. The article referred to was prepared at our request by a professor of economics and is without bias or intent to spread propaganda. Pennsylvania Farmer did not join in the general condemnation of the bill when it was first introduced, and after careful consideration we are inclined to approve of its general purpose, which is to tax large holdings of land. Many farmers have been misled by opponents of the measure into thinking that it is a scheme to further increase the farmers' taxes. A reading of the bill in the light of facts shows that not more than 10 per cent of the farmers of the United States would be affected. It provides a tax of one per cent upon land values in excess of \$10,000, exclusive of buildings and improvements. For example, if a farm was assessed at \$15,000 and the buildings were valued at \$5,000 or more, the owner would pay no tax. Or, if a farm was assessed at \$20,000 and the buildings and improvements were worth say, \$6,500 the owner would pay tax on \$3,500. It is estimated that the law would furnish \$80,000,000 in taxes, collected almost entirely from others than Simou-pure farmers.

Increase The Revenues

WHEN a man in private business plans to increase his expenses he also provides for increasing his income if he is really a business man, and especially if he has been spending all his income in the past. Legislative bodies do not seem to be governed by this fundamental business principle. The Legislature of Pennsylvania is actuated by the most generous impulses concerning appropriations, but when it comes to providing means of raising more revenue it experiences a nervous chill, especially if the plans proposed involve increased tax upon corporations and big property holders. Just now it appears that the state will find itself short of the estimated revenue by millions of dollars, yet the business of appropriating to the institutions "back home" goes merrily on and there seems to be little prospect that bills for taxing coal and other sources of wealth will receive serious consideration. Senator Penrose has declared against additional taxation and he knows what the big interests want and don't want. Governor Sprout

Pennsylvania Farmer

suggested several sources of increased revenue, none of which would be burdensome to business or to the public, and which would be a step in the direction of equalizing taxation. The suggestions did not meet the approval of those affected and he has not seen fit to urge the plan by administrative pressure. As a result of the lack of funds, roads, schools, agriculture and other state institutions and enterprises are likely to suffer unless the people bring enough pressure to bear upon their legislators to force them to pass the bill which would put additional taxes upon the wealth named above. Joseph E. Phillips, representative from Clearfield County introduced a bill to this end last week.

The Interest Rate

A STRONG effort is being made the country over to have the legal rate of interest raised and several bills to this end have been introduced into the Legislature at Harrisburg. The plea is made that the present rate is too low to attract investment in new enterprises or to properly finance existing business; that the demand for money in some lines able to pay a premium is great enough to cause a shortage in other and vital industries. These measures are approved by a large class who, depending upon their incomes from investment, found them inadequate during the war-time period of high prices, and of course those whose business it is to lend money favor a boost in the legal rate of interest.

One or two of the bills would not seriously affect the average citizen, at least not directly. One would permit corporations to go into the open market and obtain money at the prevailing rate when they wished to float a loan. This bill has passed the House and is now in the Senate. There are two other bills which would definitely fix the legal rate of interest at 8 per cent. The people of the state should protest vehemently against the passage of either of these measures. The war-time conditions are passed and whatever consistency there might have been for increased interest rates during the period of inflation these reasons no longer obtain. Wages, incomes and profits are gradually and certainly settling to lower levels and it would be ruinous to the majority of people and industries to have a war-time rate of interest fastened permanently upon them in normal times. Even tho the law would not be retroactive in operation, mortgagors would find that their mortgages would be called in and new ones demanded at the higher rate. Tens of thousands of people would likely lose their homes, since many were bought at inflated prices, and with the owner's decreased income, interest and payments could not be made.

State College's Need

IF ALL the people of Pennsylvania could be made fully acquainted with the work and achievements of their State College, and at the same time understand the hampered conditions and the limitations under which it labors due to lack of funds we believe the Legislature would feel under obligation to appropriate the money that is asked. As an illustration the editor will give example of the needs which came under his eyes during a visit to the College last month: One of the main stock barns is located on what is called the West Farm, being west of the campus and at the extreme west side of the property. The original owner of the farm located the barn and sheds in the lowest spot on the farm. The water during a rainy time drains naturally and unavoidably into the basin where the buildings are situated. The writer's last visit was during a wet spell and the entire surroundings were shoe-top deep with mud and water. A valuable, highly bred calf was ill with pneumonia and Prof. Tomhave says that they have losses from this cause every year. Steers were standing or walking around in mire and best results from experimental work cannot be secured. Every effort is made to obviate the effects of this condition but it is a physical impossibility to remedy them at this barn.

One of the items repeated in the budget this year is a sum to build a suitable stock barn adjacent to the other stock barns on the East side. This would provide an ideal situation and at the same time avoid the costly necessity of hauling

all feed, bedding and produce across the property as is now the case.

The expenses of conducting the College have increased as they have in every other business. The appropriation made two years ago was insufficient to cover the actual cost without cutting and trimming, and delaying many necessary repairs. With the increased cost of fixed expenses considered it will be necessary to provide a minimum increase equal to 70 per cent of over that of two years ago even to continue the present curtailed activities. But that is not all, nor is it sufficient. At present a large number of classrooms are crowded beyond the proper number for effective instruction; a number of class rooms and laboratories are located in poorly lighted and improperly heated basements and attics; in some laboratories two and sometimes three students are compelled to work at single desks; in some instances single rooms house two different classes at a time; in many cases laboratories are scheduled for so many hours per day as to prevent adequate preparation of laboratory materials for successive classes; some laboratory courses have had to be cancelled for lack of space. Office quarters are so congested that in many departments from four to ten workers are located in single small rooms. The number of women students who can be admitted to the College has reached a maximum until more dormitory facilities are provided.

Every far-seeing farmer and every believer in higher education should use his or her influence with their legislators to deal generously with State College in matters of appropriations, remembering that it is the only college in the state which has no endowment, charges no tuition, but which has many costly obligations placed upon it by law.

Our Washington Letter

Secretary of Agriculture Wallace is speedily getting "into harness" in the Department of Agriculture, and is making a favorable impression. Representative farmers who call upon him at his office are given a genuine Western welcome, and go away firmly convinced that Secretary Wallace aims to keep in close touch with the sentiment and needs of the farm folks, and is in no danger of losing the farmers' viewpoint in dealing with great agricultural problems.

At a conference with the Washington newspaper men and farm paper correspondents, Secretary Wallace issued a statement in which he clearly outlined the agricultural situation, pointing out the causes of the present depressed condition of the farmers and promising that under his administration the department would do all within its power to give practical assistance to farmers. Finding an outlet for the great food surplus, searching for ways to produce more cheaply, trying to find new uses for farm products, developing a more efficient marketing system, straightening curves and lowering the grades between the producer and the consumer are some of the activities in which the department should engage, according to Secretary Wallace.

The Secretary gave as his opinion that greater interest would develop in eastern farming because of the higher freight rates, which increase the cost of putting the products of Western farms upon the large eastern seaboard markets.

Cheap food is evidently one of the means which the great industrial interests are preparing to use in their efforts to compete with European manufacturers in the world's markets. Cheap food means low wages, an important essential in meeting European competition. In order to get this cheap food a movement will be promoted to locate immigrants on small farms with the aid of the Farm Loan act.

Commissioner of Internal Revenue William M. Williams has as yet made no announcement of any change in the so-called adulterated butter ruling of the Treasury which is to go into effect on April 1. It is probable that the butter interest, especially the creamery men, will ask for an injunction to prevent the putting of the ruling into effect. The ruling will be stubbornly contested in the courts.

The Washington representatives of the farm organizations have at last arrived at a practical realization of the fact that the only way by which they can accomplish desired results in promoting or preventing legislation is to get together, and leave their personal disagreements and organizational differences behind when they make their appearance on Capitol Hill. They have suggested to the heads of their organizations that they call a meeting of their executive committees in Washington early in April, to jointly formulate a legislative program upon which they all can agree, and which can be presented to Congress as the united voice of agriculture.

March 26, 1921.

March 26, 1921.

HARRISBURG LETTER

Revenue Problem Unsolved.—The Legislature began its final six weeks today without a revenue policy; appropriations piling up at every session of the two houses; official estimates of the revenues not yet submitted and a disposition on the part of officials and lawmakers to "pass the buck." The record of accomplishment for the session thus far is surprising in view of the time and money spent on the session and about all there is to show for it is (ons of printing, most of which will be rather poor satisfaction to the men to take home in place of sizable appropriations. Members of the House made an effort in the week just closed to point the way to getting revenue from new sources after having found the State Administration firm in its refusal to sponsor any revenue legislation, but were just as shy as the Governor or the chairmen of the appropriations committees in urging that the state payroll be cut and the allowances to charities not under state control be cut. It seems odd that so manifest an opportunity for real economy should be passed up at a time when complaint against governmental expense was general. But it is like a good many other things that have occurred on Capitol Hill. Some times it takes an earthquake or a cyclone to wake people up.

The Educational Jam.—Just at present it appears the educational bills, which provide not only increased salaries for teachers, but aid for fourth class districts so that they can improve facilities and give the youngsters a chance and regulate qualifications of teachers, are like logs which have been caught in a jam. They cannot move until the revenue proposition is started off.

The State Fair Bill.—The State Fair bill is to be given a hearing before the House appropriations committee this week and the fight against it will come to a climax. The bill got out of committee last week, but is scheduled to go back. The small fair people are up in arms against it and the large fair people are insistent that the project so strongly advocated shall not be created to interfere with their business.

State College Appropriation.—The question of how much money State College will get will be settled soon. The situation is that the three big colleges are all after much money, millions more than can be voted, and in the absence of a revenue policy it would seem that the appropriations are mighty uncertain. That this should be the case after all the discussion of higher educational work and agricultural advancement is rather regretted in Harrisburg.

Ask an Accounting.—The House of Representatives has asked an accounting of what the state spent for welfare and defense during and after the war. Something like \$2,500,000 was voted for this purpose and the request for tangible results bids fair to prove interesting.

Seed Bill on the Way.—The administration pure seed bill which would require that mixtures be true to label and that origin and germinating quality be printed on its way thru the Legislature. Presented last Monday by Chairman C. G. Jordan, of the agricultural committee, it was promptly reported and bids fair to supplant the present law. The bill not only defines seeds of an agricultural character, but specifies what shall be considered noxious. Wide authority for inspection is conferred.—Hamilton, Harrisburg.

NEW YORK LETTER

Breeders Plan for Fair.—Tompkins county Holstein breeders are planning a big county exhibit of stock at the coming State Fair. It is announced that after this only tuberculosis tested animals will be allowed at the fair. This gives breeders a stimulus, as many have feared infection to their stock if shown by the side of untested cattle.

Spring Sales Enthusiastic.—Holstein breeders are planning some of the highest sales of purebreds ever held for late this month and next. The famous Oneida community herd of 180 head will be sold April 12 and 13 and replaced with grade stock,

while about 300 head will be sold next week at the Syracuse Sales Pavilion. These are all choice, tuberculin tested animals.

Potatoes Looking Up.—The heavy toll taken by rot in cellar storage potatoes, together with increased consumption has created a scarcity of potatoes on the market despite the big crop in the fall. Local buyers are offering as high as 75 cents a bushel and it is expected the price will go higher. Potato growers of Cayuga County have decided to organize several market potato associations in the county.

Milk War Ends.—The price war on retail milk prices in Auburn is ended, with both stores and delivery wagons to charge 12 cents a quart. It seems an unjust basis of agreement for stores to be obliged to charge as much as it delivered.

State Censorship Sentiment Grows.—Women's organizations and other civic bodies are creating a strong public sentiment in favor of strict censorship of motion picture films.

Wage Cuts to R. R. Employees.—Leading railroads of the state announce a wage cut to employees. They show freight traffic to be at its lowest ebb, with slight outlook for increase. Labor costs are the biggest factor in railroad expense. Carload shipments have fallen off over 50 per cent.

Back to the Farms.—A nationwide real estate firm with offices in New York announces a decided exodus of city people to the farms, both as buyers of farms and as laborers. For the past 20 years two-thirds of this firm's customers have been farmers moving from one state to another, and one-third was composed of city men going to the farms. They find these figures now reversed. In New England this latter movement has increased 200 per cent. Many of these are believed to be men who have formerly had farming experience.

Daylight Saving Repealed.—Governor Miller signed the repeal of daylight saving. New York City will shorten its period of daylight saving two months, while other cities will decide for themselves what they will do.

NEW JERSEY NEWS

Legislature Ending.—The One Hundred and Forty-fifth Legislature of New Jersey for the session of 1920 is nearing its end, despite the fact that the Senate did not concur in a House Concurrent Resolution by Majority Leader Rowland, of Camden, for sine die adjournment on March seventeenth.

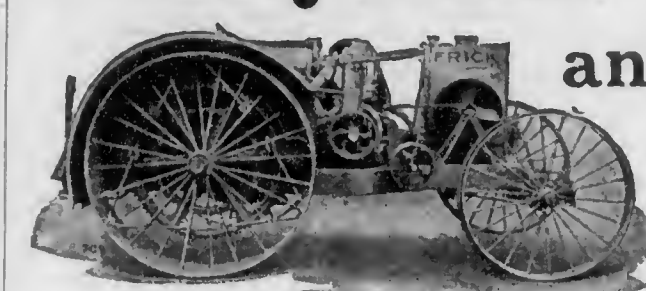
Damages for Heifer.—The oldest bill passed in the House for the session was one providing for the payment of \$125 to a Hunterdon County farmer for the loss of a heifer, which was blown to pieces after chewing on a stick of dynamite that was laid alongside of a road near the heifer's property while employees of the State Highway Department were building a road.

Pleaded Over Legislation.—Cattle breeders in this state are much pleased over the action of Governor Edwards in signing a bill carrying an appropriation which will make it possible for dairymen to obtain assistance in testing their cows for tuberculosis. J. W. Bartlett, secretary of the Holstein-Friesian Association of New Jersey, has announced that a campaign is being conducted to encourage all members of that organization to place their herds under State and Federal supervision. He also stated that the breeders of Holstein cattle were glad to co-operate with welfare leagues to make this a state free from tuberculosis. Mr. Bartlett added that when herds are tested three times at intervals of six months without a reactor, or twice at intervals of one year, the herds become accredited. Cattle from these farms can be shipped anywhere, as long as they pass a clean test once each year, he declared. Mr. Bartlett also announced that this state will soon be near the top as a clean state, and that during the past two weeks twelve herds in Somerset and Hunterdon counties have been tested, and that several herds in Salem and Cumberland counties are under state supervision and report less than four per cent reactors.—Kelly, Trenton.

Pennsylvania Farmer

7-359

Pennsylvania Farmers



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close of the hatching period, which should be about September first in this state.

This method has given reasonably good control of the peach-tree borer in the experiments conducted by the U. S. Department for three seasons. It has not been as safe on young trees as might be desired, however, and neither has the control of the older trees reached 100 per cent in efficiency. Furthermore it is considered doubtful whether such a degree of control can be secured safely by any artificial measures. They have secured as high as 94 per cent of complete control, however, which compares very favorably with the results secured by the ordinary practice of "worming."

In view of all the facts, therefore, the gassing method of combatting the peach-tree borer, with the aid of para-dichlorobenzene, seems to be promising, but but is evidently not yet ready for general recommendation. If tried at all, it should only be done in an experimental way, and on trees which the owner feels that he can afford to lose. Any one desiring further information in regard to the process, can secure it by writing the Secretary of Agriculture, Washington, D. C., requesting a copy of Department Bulletin No. 796, on the "Use of Toxic Gases as a Possible Means of Control of the Peach-tree Borer." In case any trial is made, we shall be glad to learn the results.

Other gases tried by the Department workers included such well known fumigants as carbon bisulfide, carbon tetrachloride, hydrocyanic acid, and naphthalene, but none of them proved to be anywhere near the equal of the para-dichlorobenzene for all kinds of conditions. It is to be hoped that the factors governing its safety can be more fully determined in the near future, so that peach growers can at least add this additional means of defense against the ravages of this very destructive insect.

QUESTION ON SPRAYING

Please give me some information on the following questions:

- (1) What is the value of spelt or emmer as a feed for farm animals? How does it compare with barley?
- (2) Will a hydrometer of the kind used to test storage batteries do to determine the specific gravity of concentrated lime-sulphur? What is meant by degrees Baume? It is not indicated on my hydrometer.
- (3) Will atomic sulphur take the place of lime sulphur, self-boiled, in spraying peach trees for brown rot?—H. E. D., Chester Co., Pa.

In this connection, I would say that emmer and spelt are quite different plants, altho they have been very often confused in this country. According to the principal authorities on feeds and feeding, the comparative feeding value of emmer and barley may be seen from the following:

	N. free	Dig. prot.	Fat.	Fiber.	ext'c.
	p.cent	p.cent	p.cent	p.cent	p.cent
Emmer	10	2.2	11.1	62.9	
Barley	9.4	1.8	4.2	68.7	

(2) A storage battery hydrometer is all right in principle to test lime-sulphur concentrates, but it usually has a scale of too wide a range, with insufficient marking of the degrees of density. You would better get a regular lime-sulphur hydrometer with both specific gravity and Baume scales marked on it. Reliable dealers should be able to supply you.

The Baume scale is simply another

method of measuring the density of liquids in comparison with the density of water. It is divided into degrees, while the specific gravity scale is divided into decimals. The latter is much more convenient in making dilutions, and is almost universally used in all scientific laboratories. The Baume readings usually seem to be a little higher than specific gravity readings of same density, which apparently commends them to the commercial trade. For example, a 31 degree Baume concentrate is just equal in strength to a 1.27 specific gravity concentrate.

(3) Atomic sulphur is intended to be the commercial equivalent of the 8-8-50 self-boiled lime-sulphur, and it usually comes up to this expectation, so far as its efficiency is concerned. It is generally considerably more expensive, however, and we know of some cases where it apparently caused considerable burning to peach foliage.

NEW THINGS IN THE GARDEN

All of us who have home gardens raise in them the usual variety of vegetables. We have beans, both snap and shell, a succession of peas and sugar corn, cucumbers, summer squash, tomatoes, cabbage, lettuce and the root crops such as beets, carrots and turnips. A glance thru the seed catalogs will show other vegetables not so commonly grown, but many of them are certainly of value by way of furnishing a variety for summer and fall use. Many plants, like Chinese cabbage, New Zealand spinach, Swiss chard and kale are of value for "greens." Chinese cabbage is really a sort of summer salad plant. There are several varieties which are not greatly different from each other. We sow the seed the last of July and it may be planted even later. The leaves are ready for use in four or five weeks. Some also enjoy it as a pot herb. It is of easiest culture. Endive is a salad plant that beats all others when properly grown. It should be planted like lettuce the latter part of July. The plant makes heads similar to lettuce. When these are well grown, the leaves should be bunched together and tied for blanching.

Whitloof chicory is so easy to grow that every farm garden ought to raise a supply for winter forcing. The seed sown in drills during May make large parsnip-like roots by October. These are taken up and set in trenches or boxes of earth in the cellar, where a beautiful growth of tender blanched leaves will start. This is the best winter salad plant and, contrary to general belief, it is very easy to grow and blanch for winter use.

Celeriac is a plant that can scarcely be distinguished from celery during the early part of the season. Instead of growing large stalks like celery, however, a bulb some two inches in diameter forms at the base of the top growth. This bulb is a most delicious vegetable, cooked in a variety of ways. We have had particularly good luck in growing celeriac, starting the plants like celery and transplanting to the garden in July. A little earthing up is necessary, just enough to keep the stalks upright so the bulb will form.

There are several other vegetables not commonly seen which are excellent. Perhaps we should mention kohlrabi. This is a sort of a cross between a turnip and a cabbage. If the vegetables are cooked when of the size of an egg, they are of pleasing flavor.—C. H. Chesley.

SUBSIDIZING THE RURAL SCHOOL

(Continued from Page 2).

and only the harder spirits brave the winter. It is a rather new country agriculturally, and the real reason we are making this trip is simply to prove to the most skeptical that there are really fine schools in the sparsely settled sections of the country. The school at Pequot, which was erected a number of years ago, has already been outgrown and other buildings have been pressed into service. In fact, that seems to be the experience all along the line—as soon as a community gets a consolidated school, the attendance jumps rapidly. An interesting feature of this school is a special teacher who is employed to enable the farm boys who enter school late in the fall to catch up with their work, especially those employed during the potato digging season in the fall.

Just about every town on the railroad line that runs to our international boundary boasts a good consolidated school. The second station from Pequot is Pine River, and here is found one of the older consolidations, one which took place in 1912. This school is in Cass County, one of the large counties of the state. About 300 pupils are enrolled in this school, half coming from the town and half from the country.

An interesting feature in connection with this school is the home management house for girls who live too far from Pine River to be transported every morning and evening. There are various positions in connection with this house, such as manager, first housekeeper, second housekeeper, and workers, the girls changing from one position to another. The domestic science teacher acts as matron and a cook is employed. The girls receive one school credit for this work. In a school of this sort, which has more than 300 pupils, the courses of study are divided into academic, agricultural, home training, normal training, commercial and mechanical or shop courses.

These schools in northern Minnesota have been described to show what has been accomplished under pioneer conditions. If such schools as these are maintained in the more sparsely settled sections of a state, with as long winters and as snowy weather as Minnesota, there can hardly be any excuse for poor country schools in more favorably situated communities. It has been found in many parts of Minnesota that real estate men are selling property on the basis of good school facilities, and more than one family has settled in a particular community because a consolidated school was only a short distance away.

The Transportation Problem

The question of transporting children to and from school, which always seems insurmountable in the minds of most school patrons, is often a very small matter after all. If Minnesota can transport its pupils thru snow drifts and cold weather, it certainly can be accomplished in almost any other state. It will be seen that the schools were closed on an average of less than a third of a day each for the entire year on account of impeded transportation. The cost of transportation averaged less than 10 cents a mile per pupil per day, this figure including the round trip. No route is over six, and preferably they should not be over five miles long.



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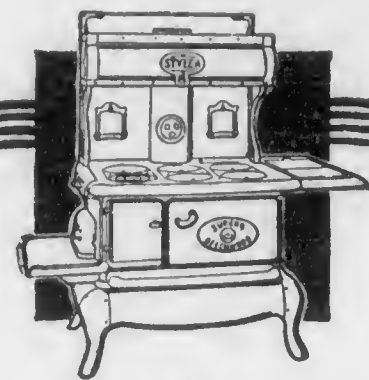
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Of Interest to Farm Women and Girls

Hints on Varnishing

THERE is just as much fun in applying a coat of varnish to a surface as there is in painting it, and it is as satisfactorily done, too, if one will just observe a few fundamental rules.

Clean the Surface to be Varnished

Get it absolutely clean. If the surface has been previously varnished, clean it with ammonia and water, using one tablespoonful of ammonia to a quart of water, and apply it with a clean cloth. If any grease spots remain, remove them with gasoline or benzine. If there are dark spots on the wood where the varnish has worn off, they can be bleached with an oxalic acid solution (one part oxalic acid crystals per ten parts cold water shaken until dissolved).

When the surface has dried thoroughly, sandpaper it until it is smooth, then wipe off the dust. This is best done with what the painters call a "tack rag." This is merely a piece of clean, lint-free cloth that has been dipped in the varnish about two hours previously and hung up. While the surface may appear perfectly clean, wiping it off with this "tack rag" will show that the pores of the wood were filled with many particles of dust.

Applying the Varnish

The bare spots should be given a first coat of varnish, thinned to about ten per cent with turpentine, and allowed to dry before the entire surface is varnished. When this operation has been completed, close the room, and wait until all dust has had a chance to settle. Better not apply the full coat until the next day. The temperature of the room in which the varnishing is to be done should be around 70 to 75 degrees Fahrenheit. If the house is artificially heated, it may be well to ventilate the room early in the morning, but only enough to allow the escape of any gases. Then close all windows and doors, and when the temperature is right you are ready to apply the varnish.

Your local dealer will sell you the proper kind of varnish for the surface on which it is to be applied. He will also sell you the proper kind and width of brush. See that the latter is full-bristled, elastic, and of good quality. Tap it several times on something hard, and run the bristles across the fingers to remove the dust. If any dust is left in these fine specks will pile up when carried along thru the varnish, and will look like grains of sand later. A good cleaning of the brush in turpentine will make it dustproof.

Do not shake or stir the contents of the varnish can. Open it carefully and pour into another clean vessel as much varnish as you think will be needed for the job. If any is left over, you might as well throw it away if there is no other place to use it. Do not pour it back into the supply can. Never pour back into this can any varnish in which a brush has been dipped.

Begin applying with brush well filled, and try to give the surface an even coat, not too thick or too

thin. If it is being applied too thin, the brush will drag on the surface. And if too thick, the brush will leave a raised trail. Too much varnish on a perpendicular surface will "sag" and form a "curtain." Too much on a horizontal surface will not dry for a long time.

Watch the corners and edges to see that there is no "running over." After varnishing the entire surface, wipe the brush across the top of the container to remove as much varnish as possible, and go over the corners, edges and any carved surfaces to take up any extra material. Then go out of the room, and leave the door closed for at least four hours. The average varnish will set dust free in about three hours, but give it a chance. During the setting period it must be left alone. Any person walking into the room "to see how fine it looks" will stir up enough dust to speak the finish.

The Second Coat

In 48 hours the varnish will have dried hard, and is then ready for rubbing and the application of the second coat. It is not economy to apply only one coat. When the first coat is thoroughly dry, go over it with fine sandpaper. If it is sanded off before first coat is thoroughly dry, there will be great danger of the first coat "sweating," which will cause pits in the second coat. Wipe off all resulting dust, and apply the second coat, giving it equal, if not more, care and attention than the first coat. Allow the same length of time for drying, keeping the temperature as uniform as possible.

There has always been some discussion among painters as to the advisability of ventilating a newly varnished room, but the majority claim that it is unnecessary because there is enough oxygen in the air to dry the varnish properly. And it is well known that when outside air is let in, particularly if it is cold and damp, the varnish will absorb some of the dampness and dry with a clouded appearance known as "blooming." This result, however, can be overcome afterward by rubbing the surface with a good grade of furniture polish.

Varnishing New Woodwork

On new wood, as on old, the surface must be sanded as smoothly as possible. If the wood is pine, fir or any other close-grained wood, no filler will be required. If a color other than natural is desired, an oil stain must be applied. This should not be sanded afterward. When the stain has dried for 24 hours, the first coat of varnish, thinned to about ten per cent with turpentine, should be applied, using the same care and precautions as above described.

When the priming coat has dried go over it with fine sandpaper, then thoroughly remove the dust, and apply the second coat just as it comes from the can without thinning.—J. E. D.

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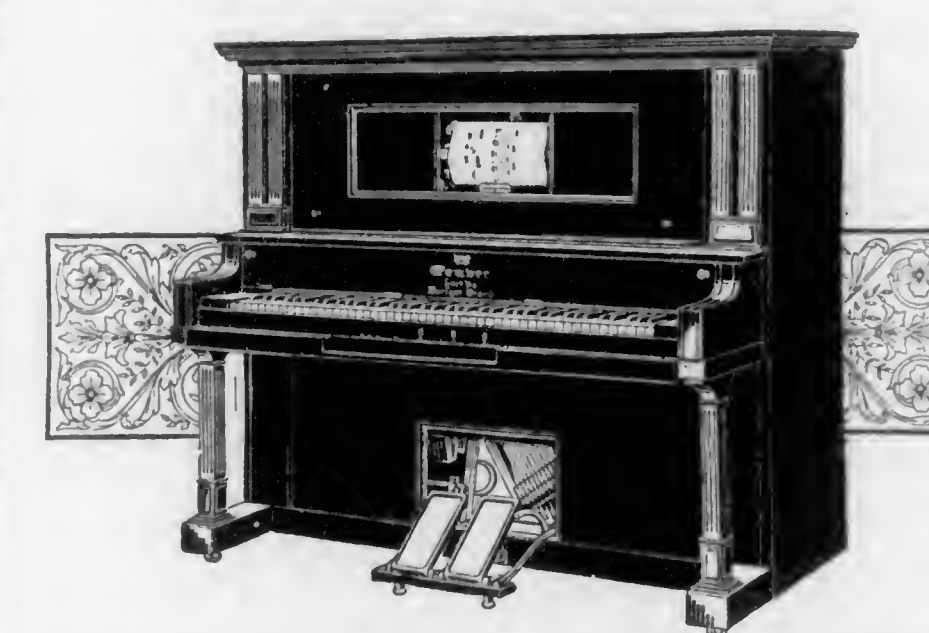
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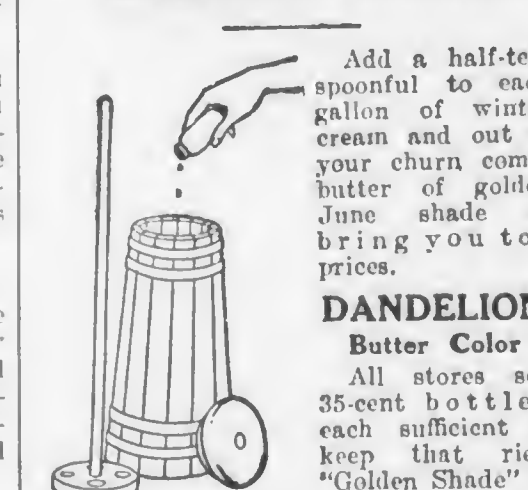
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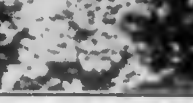
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The Voice of the Pack

by Edison Marshall

CHAPTER XV

THE SNOW was steel-gray in the moonlight when the little party made their start down the long trail. Their preparations, simple and crude as they were, had taken hours of ceaseless labor on the part of the three. The ax, its edge dulled by the flame and its handle burned away, had been cooled in the snow, and with his one sound arm, Lennox had driven the hot nails that Snowbird gathered from the ashes of one of the outbuildings. The embers of the house itself still glowed red in the darkness.

Dan had cut the green limbs of the trees and planed them with his ax. The sled had been completed, handles attached by pushing it, and a piece of fence wire fastened with nails as a rope to pull it. The warm mackinaws of both of them as well as the one blanket that Lennox had saved from the fire were wrapped about the old frontiersman's wasted body—Dan and Snowbird hoping to keep warm by the exercise of propelling the sled. Except for the dull ax and the half-empty pistol, their only equipment was a single charred pot for melting snow that Dan had recovered from the ashes of the kitchen.

The three had worked almost in silence. Words didn't help now. They wasted no sorely-needed breath. But they did have one minute of talk when they got to the top of the little ridge that had overlooked the house.

"We'll travel mostly at night," Dan told them. "We can see in the snow, and by taking our rest in the daytime, when the sun is bright and warm, we can save our strength. We won't have to keep such big fires then—and at night our exertion will keep us as warm as we can hope for. Getting up all night to cut green wood with this dull ax in the snow would break us to pieces very soon, for remember that we haven't any food. I know how to build a fire even in the snow—especially if I can find the dead, dry heart of a rotten log—but it isn't any fun to keep it going with green wood. We don't want to have to spend any more of our strength stripping off wet bark and hacking at saplings than we can help; and that means we'd better do our resting in the heat of the day. After all, it's a fight against starvation more than anything else."

"Just think," the girl told them, reproaching herself, "if I'd just shot straight at that wolf today, we could have gone back and got his body. It might have carried us thru."

Neither of the others as much as looked surprised at these amazing regrets over the lost, unsavory flesh of a wolf. They were up against realities, and they didn't mince words. Dan smiled at her gently, and his great shoulder leaned against the

traces.

They moved thru a dead world. The ever-present manifestations of wild life that had been a delight to Dan in the summer and fall were quite lacking now. The snow was trackless. Once they thought they saw a snowshoe rabbit, a strange shadow on the snow, but he was too far away for Snowbird to risk a pistol shot. The pound or two of flesh would be sorely needed before the journey was over, but the pistol cartridges might be needed still more. She didn't let her mind rest on certain possibilities wherein they might be needed. Such thoughts stole the courage from the spirit, and courage was essential beyond all things else

WHEN PA IS SICK

When pa is sick,
He's scared to death,
An' ma an' us
Just holds our breath.

He crawls to bed
An' puffs and grunts,
An' does all kinds
Of crazy stunts.

He wants Doc. Brown
An' mighty quick;
For when pa's ill,
He's awful sick.

He gasps and groans
An' sort o' sighs,
He talks s' queer
An' rolls his eyes.

Ma jumps an' runs
An' all of us
An' all the house
Is in a fuss.

An' peace an' joy,
Is mighty skeerce—
When pa is sick
It's somethin' fierce.

WHEN MA IS SICK

When ma is sick
She pegs away,
She's quiet though,
Not much t' say.

She goes right on
A-doin' things,
An' sometimes laughs,
Or even sings.

She says she don't
Feel extra well,
But then it's just
A kind o' spell.

She'll be all right
Tomorrow sure,
A good old sleep
Will be the cure.

An' pa he sniffs,
An' makes a kick,
Says woman-folks
Is always sick.

An' ma she smiles,
Let's on she's glad—
When ma is sick,
It aint s' bad.

to bring them thru.

Once a flock of wild geese, stragglers from the main army of waterfowl, passed overhead on their southern migration. They were many months too late. They called down their eerie cries—that song that they had learned from the noise the wind makes, blowing over the bleak marshes. It waited down to them a long time after the flock was hidden by the distant tree tops, and seemed to shiver, with curious echoes, among the pines. Trudging on, they listening to its last note. And possibly they understood the cry as never before. It was one of the untamed, primitive voices of the wilderness, and they could realize something of its sadness, its infinite yearning and complaint. They knew the wilderness now, just as the geese themselves did. They knew its cold, its hunger, its remorselessness, and beyond all, the fear that was bright eyes in the darkness. No man could have crossed that first twenty miles with them and remained a tenderfoot. The wild was sending home its

lessons, one after another, until the spirit broke beneath them. It was showing its teeth. It was reminding them, very clearly, that in spite of houses built on the ridges and cat-tle pens and rifles and all the tools and aids of civilization, it was still unconquered.

Mostly the forest was heavily laden with silence. And silence, in this case, didn't seem to be merely an absence of sound. It seemed like a substance in itself, something that lay over the snow, in which all sound was immediately smothered and extinguished. They heard their own footfalls in the snow and the crunch of the sled. But the sound only went a little way. Once in a long time distant trees cracked in the frost; and they all stood still a moment, trying to fight down the vain hope that this might be some hunter from the valleys who would come to their aid. A few times they heard the snow sliding, with the dull sound of rolling window shade, down from the overburdened limbs. The trees were inert with their load of snow.

As the dawn came out, they all stood still and listened to the wolf pack, singing on the ridge some-

"That leaves a work-day of nineteen hours," Dan persisted. "Not any too little. Five hours it will be."

He found where the snow had drifted against a great, dead log, leaving the white covering only a foot in depth on the lee side. He began to scrape the snow away, then hacked at the log with his ax until he had procured a piece of comparatively dry wood from its center. They all stood breathless while he lighted the little pile of kindling and heaped it with green wood—the only wood procurable. But it didn't burn freely. It smoked fitfully, threatening to die out, and emitting very little heat.

But they didn't particularly care. The sun was warm above, as always in the mountain winters of Southern Oregon. Snowbird and Dan cleared spaces beside the fire and slept. Lennox, who had rested on the journey, lay on his sled and with his uninjured arm tried to hack enough wood from the saplings that Dan had cut to keep the fire burning.

At three they got up, still tired and aching in their bones from exposure. Twenty-four hours had passed since they had tasted food, and their unrelieved system complained. There is no better engine in the wide world than the human body. It will stand more neglect and abuse than the finest steel motors ever made by the hands of European craftsmen. A man may fast many days if he lies quietly in one place and keeps warm. But fasting is a deadly proposition while pulling sledges over the snow.

Dan was less hopeful now. His face told what his words did not. The lines cleft deeper about his lips and eyes; and Snowbird's heart ached when he tried to encourage her with a smile. It was a wan, strange smile that couldn't quite hide the first sickness of despair.

The shadows quickly lengthened—simply leaping over the snow from the fast-falling sun. Soon it dropped behind the ridge; and the gray of twilight began to deepen among the more distant trees. It blurred the outline and dulled the sight. With the twilight came the cold, first crisp, then bitter and penetrating to the vitals. The twilight deepened, the snow turned gray, and then, in a vague way, the journey began to partake of a quality of unreality. It was not that the cold and the snow and their hunger were not entirely real, or that the wilderness was no longer naked to their eyes. It was just that their whole effort seemed like some dreadful emburdened journey in a dream—a stumbling advance under difficulties too many and real to be true.

The first sign was the far-off cry of the wolf pack. It was very faint, simply a stir in the ear drums, yet it was entirely clear. That clear, cold mountain air was a perfect telephone system, conveying a message distinctly, no matter how faintly. There were no tall buildings or cities to disturb the ether waves. And all three of them knew at the same instant it was not exactly the cry they had heard before.

They couldn't have told just why, even if they had wished to talk about it. In some dim way, it had lost the strange quality of despair that it had held before. It was as if the pack were running with renewed life, that each wolf was calling to another with a dreadful sort of exultation. It was an excited cry too—not the long, sad song they had learned to listen for. It sounded immediately behind them.

"Too long, if we were going to make it out," Lennox objected.

They couldn't help but listen. No human ears could have shut out the sound. But none of them pretended that they had heard. And this was the worst sign of all. Each one of the three was hoping against hope in his very heart; and at the same time, hoping that the others did not understand.

For a long time, as the darkness deepened about them, the forests were still. Perhaps, Dan thought, he had been mistaken after all. His shoulders straightened. Then the chorus blared again.

The man looked back at the girl, smiling into her eyes. Lennox lay as if asleep, the lines of his dark face curiously pronounced. And the girl, because she was of the mountains, body and soul, answered Dan's smile. Then they knew that all of them knew the truth. Not even an inexperienced ear could have any delusions about the pack song now. It was that oldest of wilderness songs, the hunting-cry—that frenzied song of blood-lust that the wolf pack utters when it is running on the trail of game. It had found the track of living flesh at last.

"There's no use stopping, or trying to climb a tree," Dan told them simply. "In the first place, Lennox can't do it. In the second, we've got to take a chance—for cold and hunger can get up a tree where the wolf pack can't."

He spoke wholly without emotion. Once more he tightened the traces of the sled.

"I've heard that sometimes the pack will chase a man for days without attacking," Lennox told them. "It all depends on how long they've gone without food. Keep on and try to forget 'em. Maybe we can keep 'em bluffed."

But as the hours passed, it became increasingly difficult to forget the wolf pack. It was only a matter of turning the head and peering for an instant into the shadows to catch a glimpse of one of the creatures. Their forms, when they emerged from the shadows of the tree trunks, were entirely visible against the snow. They no longer yapped and howled. They acted very intent and stealthy. They had spread out in a great wing, slipping from shadow and shadow, and what were their mental processes no human being may even guess. It was a new game; and they seemed to be seeking the best means of attack. Their usual fear of men, always their first emotion, had given way wholly to a hunting cunning: an effort to procure their game without too great risk of their own lives. In the desperation of their hunger they could not remember such things as the fear of men. They spread out farther, and at last Dan looked up to find one of the gray beasts waiting, like a shadow himself, in the shadow of a tree not one hundred feet from the sled. Snowbird whipped out her pistol.

"Don't dare!" Dan's voice cracked out to her. He didn't speak loudly; yet the words came so sharp and commanding, so like pistol fire itself, that they penetrated into her consciousness and choked back the nervous reflexes that in an instant might have lost them one of their three precious shells. She caught herself with a sob. Dan shouted at the wolf, and it melted into the shadows.

"You won't do it again, Snowbird," he asked her very humbly. But his meaning was clear. He was not as skilled with a pistol as she; but if her nerves were breaking, the

gun must be taken from her hands. The three shells must be saved to the moment of utmost need.

"No," she told him, looking straight into his eyes. "I won't do it again."

He believed her. He knew that she spoke the truth. He met her eyes with a half smile. Then, wholly without warning, Fate played its last trump.

Again the wilderness reminded them of its might, and their brave spirits were almost broken by—the utter remorselessness of the blow. The girl went on her face with a crack of wood. Her snowshoe had been cracked by her fall of the day before, when running to the fire, and whether she struck some other obstruction in the snow, or whether the cracked wood had simply given way under her weight, mattered not even enough for them to investigate. As in all great disasters, only the result remained. The result in this case was that her snowshoe, without which she could not walk at all in the snow, was irreparably broken.

CHAPTER XVI

"Fate has stacked the cards against us," Lennox told them, after the first moment's horror from the broken snowshoe.

But no one answered him. The girl, white-faced, kept her wide eyes on Dan. He seemed to be peering into the shadows beside the trail, as if he were watching for the gray forms that now and then glided from tree to tree. In reality, he was not looking for wolves. He was gazing down into his own soul, measuring his own spirit for the trial that lay before him.

The girl, unable to step with the broken snowshoe, rested her weight on one foot and hobbled like a bird with broken wings across to him. No sight of all this terrible journey had been more dreadful in her father's eyes than this. It seemed to split open the strong heart of the man. She touched her hand to his arm. "I'm sorry, Dan," she told him. "You tried so hard—"

Just one little sound broke from his throat—a strange, deep gasp that could not be suppressed. Then he caught her hand in his and kissed it—again and again. "Do you think I care about that?" he asked her. "I only wish I could have done more—and what I have done doesn't count. Just as in my fight with Cranston, nothing counts because I didn't win. It's just fate, Snowbird. It's no one's fault, but maybe, in this world, nothing is ever any one's fault." For in the twilight of those winter woods, in the shadow of death itself, perhaps he was catching glimpses of eternal truths that are hidden from all but the most far-seeing eyes.

"And this is the end?" she asked him. She spoke very bravely.

"No!" His hand tightened on hers. "No, so long as an ounce of strength remains. To fight—never to give up—may God give me spirit for it till I die."

And this was no idle prayer. His eyes raised to the starry sky as he spoke.

"But, son," Lennox asked him rather quietly, "what can you do? The wolves aren't going to wait a great deal longer, and we can't go on."

"There's one thing more—one more trial to make," Dan answered. "I thought about it at first, but it was too long a chance. And I suppose you thought of it too."

(Continued Next Week.)

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KEEPING SMOKED MEATS

I write to ask you if you can advise me any way I can keep side meat from getting moldy after it has been cured and hung up. Would it be advisable to keep it in pickle all season? Would the pickle have to be changed frequently and if so how often?—James Lusby.

The keeping of smoked meat without becoming moldy is one of the problems of the farmer who prepares his own supply of meat. The development of a dry mold on the outside of the meat does not injure the meat to any extent except that it makes it inconvenient and somewhat wasteful when removed before the meat is used.

There are several fairly satisfactory ways of keeping the meat in good shape after it has been smoked. If it is used early in the spring or summer it may be left in the smoke house and occasional smoke built under the meat. This practice will keep away skippers. The house should be screened so that flies cannot get on the meat, but there should be circulation of air. If it is to be kept until late in the summer, it may be wrapped in paper and muslin and packed in a grain bin but not close enough for the pieces to touch. It can also be kept in a satisfactory manner when packed unwrapped in granulated rock salt as the smoked meat will absorb but little of the salt.

Another satisfactory way of keeping the meat is to wrap it in paper and burlap and cover it with a yellow wash. After the meat has been washed with this material it should be hung up and not put up on a pile. The direction for making and applying this material is as follows: For 100 pounds of hams or bacon, use 3 pounds of barium sulphate, 1 ounce dry glue, 14 ounces chrome yellow, 6 ounces flour. Fill a pail about one-half full of water and put the flour in it, breaking up the lumps thoroughly. Mix the chrome yellow in a quart of water in a separate vessel, add the glue and pour both into the flour and water mixture. Bring the mixture to a boil and add the barium sulphate, stirring it slowly. Allow the mixture to cool thoroughly after which it is applied with a brush. Stir the mixture while it is being applied. It would not be advisable to leave the meat in the pickle unless it is to be used as salt pork. The mixture might have to be changed, especially if sugar or syrup have been used as an ingredient for curing.—W. H. Tomhave.

MINERALS IN STOCK FEED

In what form is it best to feed lime and other minerals to livestock with their grain and roughage? I understand that minerals should be fed for the best welfare of the animal but do not know where to get them in the proper form.—A. R., Bucks Co., Pa.

A. R.—In calculating rations, it is important to consider the calcium and phosphorous content of the feeds that are used. Such feeds as straw, chaff, timothy hay, root crops, molasses, cereals and their by-products such as bran and middlings are low in calcium. Crops grown on land low in lime are also usually low in

this element. Legume crops such as clover, alfalfa, beans and peas are high in calcium or lime. Such roughages as straw, chaff, timothy hay and molasses are low in phosphorus while the cereal crops and their by-products and packing house by-products carry it in abundance.

Animals fed a ration that is deficient in these elements will not do well; especially is this true of growing animals. Experiments show that where lime alone is lacking, it can be supplied by feeding legume hay or the lime can be fed in the form of chalk or ground limestone. If phosphorous alone or both lime and phosphorous are lacking, these may be supplied in ground rock phosphate or else in the form of bone ash or bone meal.

The ground rock phosphate and the ground lime alone can no doubt be secured on the local market. The local feed dealer can also secure the bone ash or bone meal.—W. H. T.

FEED FOR YOUNG PIGS

I have just bought 4 nice shoats about 50 pounds each. They don't seem to like anything I feed them. Have tried red and white middlings, corn and oats chop, stale bread, sour milk and buttermilk. I also sifted the oat hulls out of the chop and still they go on like wild for something to eat when I go in the pen.—H. C. T., Berks Co., Pa.

H. C. T.—There seems to be no apparent reason why these pigs will not eat the feed that is being offered them, except that the pigs may not have become accustomed to their new environment. The feeds that you are giving them can be combined in such a manner as to make a fair ration for pigs of this weight. I believe that these pigs should be allowed to run out in a yard or lot instead of being closely confined. The ration which is being fed might be improved by introducing some corn into it. A combination of two parts corn, one part of the middlings and one part oats will make a good growing ration if fed with a liberal allowance of skim milk or buttermilk. If the milk cannot be had, add one part of tankage or fish meal to the mixture.

Change the feed to the combination that has been suggested and allow them to run out in a yard or paddock and there should be no trouble to get them to eat and do well.—W. H. T.

HOGGING OFF CORN

That it pays the farmer to "hog off corn" is shown in the results of twelve Pennsylvania counties where farmers co-operated with the farm agents and agricultural extension men from the Pennsylvania State College. By allowing the hogs to harvest part of the corn crop, an average price of \$1.40 was realized per bushel in the net gain of pork from corn in the field, when unharvested corn in the field was valued at sixty to eighty cents a bushel. The average daily gain on corn in last fall's test was 1.5 pounds, a total of 422 pounds of pork being produced on an acre of corn having an average yield of 43.4 bushels.



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DEATH OF MASTER OF NEW YORK STATE GRANGE

Grange members of New York state are much saddened by the death of their loved State Master, W. Newton Giles, of Skaneateles. Mr. Giles was born in 1859, and has been an active Grange member since 1877, when he joined the Owasco grange in Cayuga County. He was elected to various offices in it and in 1889 transferred to Skaneateles Grange. He was elected state secretary in Herkimer in 1900, and held that office until 1920, when he succeeded present National Master Lowell, as master of the New York State Grange.

For 37 of the State Grange's 47 years of existence he has attended every session of that body. Where his genial good cheer, and fun loving nature, his clear sighted policies and his well expressed sentiments have made him easily one of the most loved grange members in the state. His voice had splendid carrying powers and he was always sure of an attentive audience no matter how enormous the hall or how difficult its acoustic properties.

He knew the Grange, its law—its traditions and its membership in an intimate way equaled by no other man in the state. He also knew its power thru its membership as none other. For years he has been a live member of the State Grange's legislative committee and his counsels were valued at Albany as perhaps no other farmer's were.

COUNTY NOTES

Lancaster Co., Pa.—Farm sales have been in full swing during February and March and prices have been good for live stock and farm implements tho a shade lower than last year. The attendance has been above the average owing partly to the mild weather.

A good deal of plowing has been done during the winter. The wheat shows up fine. Fruit growers are fearful of later frosts, as the buds are beginning to swell. Tobacco stripping is about finished but a good percentage of the crop is still unsold.—J. B. M.

Mifflin Co., Pa.—Are having warm and spring-like weather with rain every few days which keeps the road wet and bad for hauling. Wheat and grass fields are getting green. Fruit and some other trees are swelling their buds. Leaves on the red raspberry can be plainly seen and the strawberries are pushing up thru their winter coat of mulching. Farmers are building fences and hauling manure, a few have plowed a little. Grain prices paid by dealers: Wheat, \$1.60; corn, 75c; oats, good, 60c; other produce, butter, 60c; lb.; eggs, 30c; potatoes, \$1; apples, 80c to \$1; little onions, 20c qt.; bacon, 20c lb.; lard, 15c lb. Many sales going on, at which farm implements are bringing good prices, stock selling much lower than a year ago. Many laboring men still idle as public works have not started up yet.—J. H. Byler.

Lebanon Co., Pa.—Roads are bad on account of the heavy trucks. Farmers are having a hard time marketing their products. The prevailing price for wheat is \$1.75; corn, 70c, oats 50c. Dealers offer 25c for potatoes and there are many thousands of bushels in storage. Eggs, 30c dozen and butter 65c lb.—A. Dohner.

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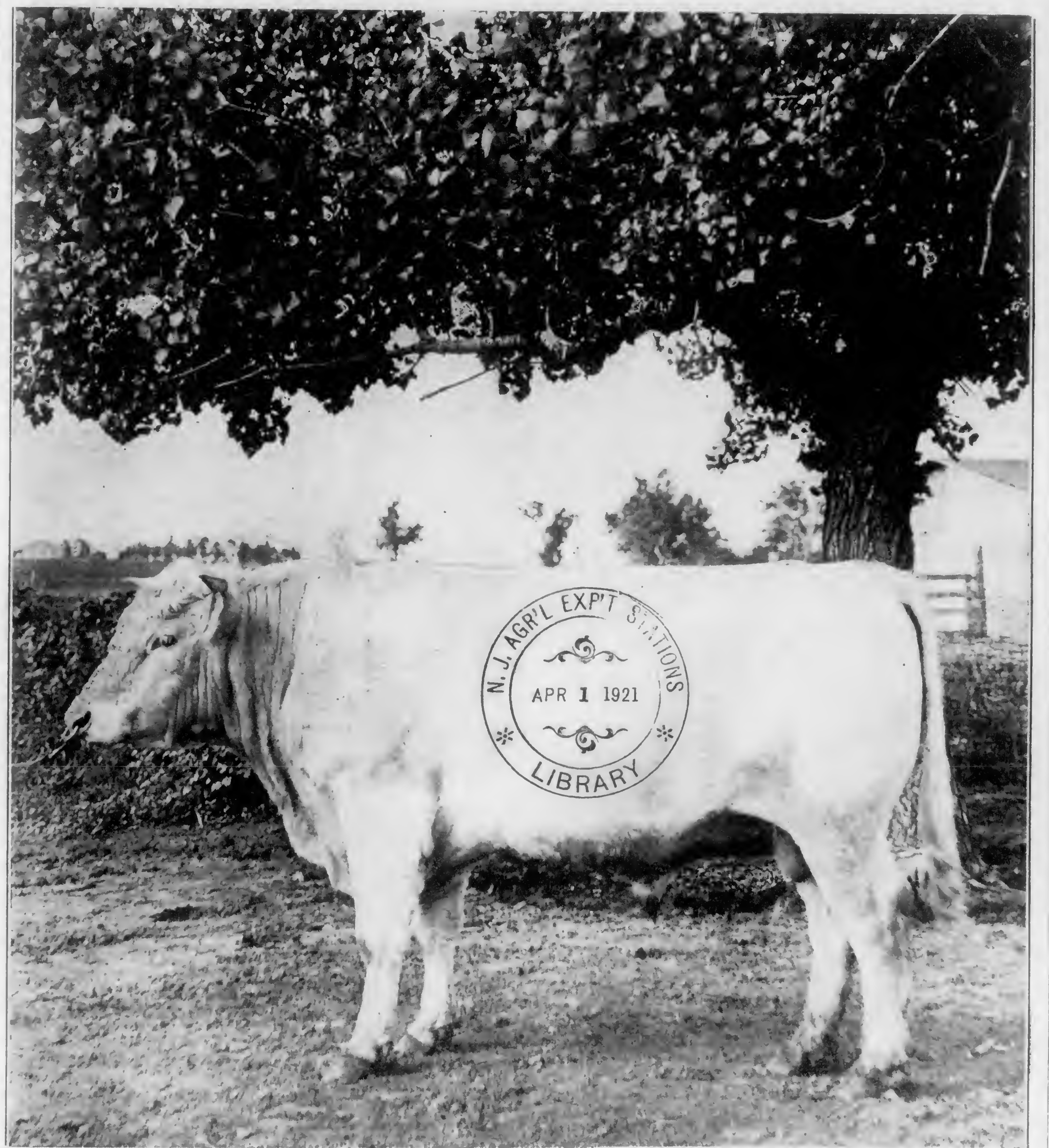
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The Immigrant and Farming

Examples of Successful Colonies in New Jersey Where Immigrants are Located

By L. G. GILLAM

At this time, when the matter of restricting immigration for a period of months is before the country, the question is often asked in our rural sections as to the relation of the immigrants to the farming industry and their effect on local conditions. Here in the Eastern States we read in our daily papers of the arrival at Ellis Island, New York, of a ship-load of immigrants bound for the farming sections and we often wonder as to their final destination. As a matter of sound economics the various states have, for many years, made a bid for immigrants to settle on their unused or undeveloped farm lands. Some have been attracted thru such efforts while many others have located in certain sections because relatives or friends have preceded them. There are now many Italian, Polish, Bohemian, Slovak, Hebrew and Portuguese farm settlements in the United States in addition to the long established numbers of Swedes, Danes, Norwegians and Germans. The report of the Senate Immigration Commission of 1919 mentions 105 farm colonies of the more recent immigrants in 19 states east of the Mississippi River.

Successful Immigrant Colonies

As an example of successful colonies of this type in the East the Italian farm colonies in South Jersey are a fine illustration of what some of our immigrants have achieved with very little money, influence or education. Unremitting toil, strict honesty, and great patience have accounted largely for the prosperity of these South Jersey Italians, who have preserved much of the warm-hearted cheer and enjoyment in simple outdoor life that distinguish their former homeland. These colonies are located mainly at East Vineland, Landisville and Buena in Cumberland and Atlantic counties and comprise in the whole several square miles of the light, easily-worked soils so familiar to many parts of southern New Jersey and which these Americanized farmers have found highly adapted to the growing of peppers, sweet potatoes, tomatoes and small fruits.

To illustrate how extensively the Italians have settled in this section of the East attention is called to figures of the last Census which show that in Cumberland County, N. J., alone there were, on January 1, 1920, 321 farm owners and 21 farm tenants who were born in Italy and who own farm property valued at \$1,726,000. In addition it is estimated that there are 120 farms in the same county owned or rented by American-born Italians which places the value of farm property owned by Italians and Italian descendants in Cumberland County at approximately \$2,226,000.

The development of these colonies is interesting. The first settlers came to this country and to South Jersey shortly after the Civil War thru the efforts of Charles K. Landis, the founder of Vineland. Believing that Italians would be interested in the country round about this town because of the similarity of climate to that of some parts of Italy Mr. Landis advertised in a New York Italian newspaper for immigrants to found an Italian Colony there. Most of those attracted by this method came from the old coun-

try by the way of New York where they worked until they saved enough money to settle on the Landis tract. Few of the settlers had any considerable sum of money so they bought the uncleared land in small tracts which averaged about 20 acres in size, paying \$20 to \$25 per acre for it and obtaining it by giving \$50 or \$100 only at the time of purchase. The new owner usually erected a small frame cabin and began to clear the land at odd times. During the summer he worked by the day for neighbors and often hired out with his entire family to pick berries. Some worked on the railroad or in the mills or glass works, putting in every spare moment on their own land. A few chickens and a horse were the first livestock purchases and nearly every man was able to make a living from his farm and poultry the second or third year and at the same time to meet his payments by his outside day labor. Several paid for their original tracts in three years and at once began to buy more land.

Almost all of the first comers or their sons are now well-to-do farmers with fine farms, good buildings and money in the banks. Since 1890 many have bought out previous owners, and settled on cleared land. All have passed thru seasons of depressed agriculture that proved their ability to hold fast and by persevering industry to weather financial crises and outlast the thrip, the rot and the blight to which some farmers were forced to succumb. "New Italy" as it is called, four miles east of Vineland, was founded in 1885 and is in the heart of the present Italian settlement. The present population for miles around is purely Italian with its two Italian churches and good schools but with no factories or industries other than farming and fruit. It is an agricultural colony in every sense, and the productive farms, substantial buildings and houses and well-kept vineyards proclaim its success.

Future Problems Perplexing

The settlement of our immigrants in colonies of this type is a step toward the solution of the many problems confronting the immigration authorities. The immigration figures for 1920 show that up to September 1, approximately 800,000 aliens had landed and that for the remaining four months the probable arrivals would increase the number beyond 1,000,000 provided ships were available. The character of the incoming peoples is not that of the races that have made this country great. As the undertaking to Americanize them is a big one, the proposed remedy is to limit newcomers to the number and kinds who could be absorbed into American social and economic life.

Legislation of this nature will be inevitable unless an immediate change is instituted. Instead of going to farms and being numbered among the great mass of Americans, foreigners are congregating in large groups in industrial centers where they speak their own language, have their own banks, insurance companies and newspapers and in some instances their own

schools. The conclusion is obvious. Either we can never become a homogeneous American people if unassimilated masses of Europeans must share our country with us or we must set limits to the tide of immigration so that a unified national life shall remain possible for us.

Farming Can Help Solve the Problem

Immigrants often lack initiative but it is largely ignorance of where to get farm work and the dire need of ready money that forces many peasants to take up work in construction gangs, factories or whatever comes to hand. A strenuous effort should be made to get such people directed toward the rural sections thus making a beginning in their Americanization and at the same time providing cheap labor supply for our farming sections. Colonies as described above are another means of assimilation.

There are many farm-raised immigrants in the United States who want farm work and some who desire idle land for farming purposes. To bring them together is largely a matter of local enterprise for which the American of tomorrow will be the better if it is done without delay.

MORE FARM BUREAUS TO GIVE 95 PER CENT ORGANIZATION

With the recent organization of county farm bureaus in Elk and Montour Counties and the proposed organization of one in Fulton County, all but three of the sixty-seven Pennsylvania counties will have farm bureaus. By the beginning of summer these additional counties will have extension representatives from the Pennsylvania State College acting as county agents, and a 95 per cent agricultural extension service will be in operation in Pennsylvania. This organization will place the state in the first rank of farm extension work, few states being organized with so high a percentage.

There are now sixty farm agents in the field. Perry County has had a farm bureau for several months and will have a representative in the near future. Fulton County was organized in March. Elk and Montour have been delayed only by the scarcity of men for this kind of work. Pike, Philadelphia, and Cameron are the only counties in the state where farm bureau organization is not a thing of the immediate future. However, there is a great demand in Pike County, and it is possible that there will be a call for a vegetable gardening specialist in Philadelphia County before long.

Last year the extension service enjoyed the most profitable period since it was inaugurated. Projects undertaken by farm agents and college extension men were more extensive and brought better results than ever before. The first county agent went out in 1912, and since that time the steady increase in crop production, stock raising and farming methods backed largely by the extensive research at the State College agricultural experiment station has done much to raise Pennsylvania's agricultural standing from sixteenth to seventh.



TYPES OF RODENT INJURY

(Photos by J. S. Houser.)

(From left to right) Nos. 1 and 2.—Fifteen-year-old apple trees girdled by mice. Note depth of injury. Nos. 3 and 4.—Seven-year-old apple trees girdled by wood-chucks in early spring. No. 5.—The mice found the crack where the protector had been spread thru accident and nearly girdled the tree. No. 6.—Growing grass and weeds forced the protector up and the mice entered below, completely girdling the tree. The protectors should be examined at the approach of winter and settled if they have become forced out of place.

Soils and Fertilizers

Conducted by Dr. J. G. Lipman

Our readers are invited to send us their problems on soils and fertilizers and they will be answered by Dr. Lipman in this column.

INVISIBLE CANNIBALS IN THE SOIL

The investigations of the last twenty-five years have taught us much about soil bacteria. They have shown that the surface soil is inhabited by vast numbers of invisible organisms, present to the extent of 10, 20 or even 50 millions in a thimbleful of soil. There are many different kinds among the invisible inhabitants of tillable land. They vary in size, shape and in the nature of the chemical changes produced by them. Many of the common species of soil bacteria are about 1-25000 of an inch long and about half as wide. In other words, 25,000 of these organisms placed end to end will represent a total length of one inch. Not a few of the species are much smaller. Not a few of them are much larger. In other words, even among these invisible soil organisms there are, relatively speaking, pigmies and giants.

The invisible life in the soil is the machinery, as it were, for keeping the plant-food capital of the land in a liquid state. In one sense soil bacteria may be called manufacturing chemists. They break down the dead tissues of plants, insects and animals: they make ammonia, nitrates, soluble phosphates, soluble potash salts, soluble lime compounds, etc. Certain kinds of these invisible chemists manufacture compounds of nitrogen, which they take from the soil air and cause it to combine with other elements. Living in the roots of legumes or directly in the soil, they help to maintain the nitrogen supply of the earth's surface. But, while they help to produce soluble food for crops, they also compete to a certain extent with higher plants by using up ammonia, nitrates, phosphates, potash salts, lime, etc., for the building of their bodies. When the soil is in a normal condition for plant growth, the amount of soluble plant food produced by soil bacteria and other invisible soil organisms is far in excess of that which is changed by them into insoluble forms.

Rich soils are usually rich in bacteria. Poor soils are poor in bacteria. Everything which makes for the rapid multiplication of the desirable soil bacteria also makes for the rapid production of available plant-food. Hence, it may be said that, in so far as the soil is made congenial for the activities of bacteria, it is also made congenial for the growth of plants. On the other hand, everything that checks the activities of soil bacteria checks the formation of available plant-food.

Among the invisible inhabitants of the soil there are organisms known as protozoa. These are relatively much larger than the bacteria themselves—some times 50 or 100 times as large. They prey upon the soil bacteria and eat up many thousands of them. When conditions are favorable for the activities of the protozoa large numbers of bacteria are destroyed by them. Their number is held in check and, for this reason, the production of available plantfood is retarded. It has been suggested by certain soil investigators, especially those at the Rothamsted Experiment Station in England, that protozoa seriously interfere with crop production because they seriously interfere with the activities of soil bacteria. This view is not accepted by all soil investigators. It is held by the opponents of this view that protozoa are not numerous or very active in normal soils in the field, even though they admit that in sewage polluted soils or in greenhouse soils well supplied with humus and moisture protozoa may seriously hamper the activities of the useful bacteria. Those who support the claim that protozoa are an important factor in soil fertility point out that, when soil is partially sterilized by heat or is treated with poisons like chloroform, ether, carbon bisulphide, alcohol, etc.,

there is at first a very drastic reduction in the numbers of soil bacteria, but, as the soil cools or as the poisons gradually disappear, the bacteria again increase in numbers to a point very much beyond the numbers contained in normal soils. Such partially sterilized soils may gradually increase the numbers of their bacteria to 10, 50 or even 100 times the numbers found in ordinary soils. It is therefore claimed that the protozoa, being more easily killed by heat or poisons, are eliminated by the partial sterilization and the bacteria then have a free field for growth and multiplication. Other explanations are given to account for the abnormal increase of bacteria in partially sterilized soils, as, for instance, partial disintegration of soil humus and of other soil constituents by heating or chemicals. Such partial disintegration enables the bacteria to obtain more food and, therefore, to multiply more rapidly. Whatever the true explanation of the abnormal multiplication of bacteria in partially sterilized soils, it is true that such abnormal multiplication not only occurs, but that it is accompanied by an increased productive power of the soil. Hence, considerable attention is now being given by soil investigators to the problem of the invisible soil cannibals and the true part which they may play in the business of crop production.

Tankage as a Fertilizer

Will you tell me thru your fertilizer column whether the following would be a very good fertilizer for corn and oats and how much of same to use. We can buy at home for \$40 per ton



Drilling Ground Bone

tankage made from dead animals, cut up and put thru a steam jacket tank and then dried and later ground fine enough to go thru the grain drill. J. L. B., Westmoreland Co., Pa.

J. L. B., Westmoreland Co., Pa.—The tankage referred to in your letter will contain 6 to 9 per cent of nitrogen and 13 to 7 per cent of phosphoric acid. The tankage that contains the higher proportion of nitrogen contains the smaller proportion of phosphoric acid and vice versa. It may be safe to assume that most of the lots of tankage which you could buy at the price quoted would contain about 7 per cent of nitrogen and 9 per cent of phosphoric acid. This in itself would make a fairly good fertilizer for oats, corn and grass. However, it would pay to modify it by the addition of other materials. The following mixture may be suggested:

Tankage	1000 lbs.
Acid Phosphate	500 lbs.
Nitrate of Soda	200 lbs.
Muriate of Potash	100 lbs.

This may be used for oats at the rate of about 200 to 300 pounds per acre and for corn and grass at the rate of 300 to 500 pounds per acre.

Poultry Manure and Ashes

Will you please give me some advice as to the mixing of fertilizer. I want to mix ashes, hen manure, nitrate of soda and sixteen per cent phosphoric acid together. I am told that by putting ashes with the other things the ashes will

drive the strength from them. What is your idea about it?—E. W. W., Morgan Co., W. Va.

E. W. W.—It is true that the use of ashes with hen manure is objectionable. The ashes, being caustic in character, tend to drive off a considerable proportion of the ammonia from the hen manure. On the other hand, there is no such objection to the mixing of hen manure either with nitrate of soda or acid phosphate.

It is estimated that 1000 pounds of live weight of poultry will produce daily 30 to 40 pounds of droppings containing 50 to 60 per cent of moisture. Fresh droppings contain on the average about 50 per cent of moisture and 0.92 per cent of nitrogen, 0.62 per cent phosphoric acid and 0.30 per cent of potash. There is, however, a very considerable range in the composition of poultry manure, due to the nature of the food used as well as the age of the birds. The nitrogen in fresh poultry manure will vary from about 0.75 to 1 per cent; phosphoric acid from 0.25 to nearly 1 per cent, and potash from less than 0.2 to near 0.5 per cent. Thoroughly dried poultry manure is more consistent in composition. It will contain on the average 7 to 10 per cent of moisture, about 1.75 per cent of nitrogen, about 2.0 per cent or somewhat less of phosphoric acid and about 1 per cent of potash.

A mixture made up of dried poultry manure, 1000 pounds; acid phosphate, 500 pounds; nitrate of soda, 400 pounds, and muriate of potash, 100 pounds, would correspond to the formula of 4-5-3. That is, it would contain 4 per cent of nitrogen, 5 per cent of phosphoric acid and 3 per cent of potash.

Where wood ashes are available, it would not be necessary to use muriate of potash. In that case, the mixture should contain 600 instead of 500 pounds of acid phosphate and no muriate of potash. To avoid the loss of ammonia, the ashes should be applied by themselves.

Should you find it desirable to reinforce fresh droppings with phosphoric acid and potash, it would be well to make up a mixture consisting of 400 pounds of acid phosphate and 100 pounds of muriate of potash, or a total of 500 pounds. One part of this material can be used to 20 parts of fresh droppings as they are being removed from the dropping boards. The fresh poultry manure thus reinforced may be applied direct at the rate of three to five tons per acre.—J. G. Lipman.

HESSIAN FLY OUTBREAK EXPECTED

The Hessian fly is dangerously abundant thruout much of the winter wheat belt at present. Only the greatest effort continued thruout the approaching spring, summer and early fall will prevent a great outbreak from starting in the wheat to be planted next fall.

The peculiar and unusual weather conditions prevailing in much of the winter-wheat belt last summer and fall are believed to have been largely responsible for the present abundance of the pest in some parts of the country. Conditions east of the Appalachian Mountains seem to be most threatening. Heavy infestation is present on the eastern shore of Maryland and Delaware and in the counties in Maryland and Pennsylvania bordering the interstate line. Infestation in these counties is more general and heavier than has been the case for many years.

There is little that can be done to save a crop of wheat when once it has become infested with the Hessian fly, because the most efficient measures to be taken against it are preventive in character, and must be carried out during the late summer and early fall. It will pay this year, however, for growers in the Eastern States to plow under any heavily infested wheat stubble directly after harvest, especially where grasses, clover, or other forage crops have not been sown with the wheat. In the case of wheat fields that have been killed out during the winter by the Hessian fly, these should be plowed down not later than April 1, where practicable. This destroys the flies before they have emerged, and prevents them from depositing eggs on the grain.

The Farmer and the Middleman

By R. G. KIRBY

Attention Farmers!



The Old Way:

And you know not when. Can you recall the above situation?



The New Way:

We are equipped with TRIPLE AIRLESS TIRES—The tire without a tube. The tire that knows no trouble, and we get double the mileage. No expense, or repair bills.

PLACE YOUR ORDER TODAY

30x3, \$28.00; 30x3½, \$32.00
31x4, \$40.00
Plus War Tax

Triple Airless Tire Co.
Manorville, Pennsylvania

CROWN GRAIN DRILLS

Big Reduction in Prices of Crown Grain Drills

Take advantage of the large price reduction on the CROWN Line of Grain Drills and Lime Sowers. We are giving the farmers every advantage in the cost of our line for the Spring Season.

New Needham Crown Drills are equipped with the improved Wizard fertilizer feed. This feed makes the farmer's Crown Grain Drill makes the New Drill the best in the market today.

Crown Mfg. Co.
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PHELPS, NEW YORK

We also make Cider Mills. Write us for catalog.



STRAWBERRY PLANTS

Good, strong, well rooted plants at \$4 and \$5 per thousand. Also a complete line of the best red and white raspberries, hardy blackberries, fancy gooseberries and currants. A large stock of popular grape vines. Many of our customers are making from \$100 to \$1200 per acre growing berries from our fruit plants. Send for our free catalog.

Bridgman Nursery Co., Box 9, Bridgman, Mich.

CLEVELAND - AKRON FARMS

Farms, 5 acres and up, \$75 to \$125 per acre, 200 Acres on improved road with stock, crops, cows, fruit, etc. \$25,000. Terms: Good buildings, 8 1/2-trail cattle, four extra good horses, all harness, etc. 15 Acres wheat, 50 acres hay, all fruit. \$25,000. Post office: Three-fourths mile from railroad station.

THE CODDING-BAGLEY-CASE CO., Medina, Ohio

Potatoes: Cobbler, Beauty, Boyce, Colon, Carmen, etc. \$1.00 per bushel. Also: Golden Wonder, etc. \$1.00 per bushel. Write: C.W. Fisher, N.Y.

HAY

H W. D. POWER & CO., 601 W. 33 St., New York

A are the largest handlers of commission hay in greater New York. If you have hay to dispose of communicate with them.

HAY

TELL the advertiser you saw adv. in Pennsylvania Farmer.

IN SELLING various kinds of farm produce I am coming more and more to appreciate the fact that the middleman performs a certain service which is necessary. At the same time there are many opportunities to dispense with his services if the producer has the time and the inclination to do it. Middlemen would not last long if they did not perform a service for which the public is willing to pay. When we avoid patronizing middlemen we find right away that our work of marketing increases. Whether the increased profit pays for the increased work is a problem that individual farmers have to solve for themselves.

Here are some ways that we have sold direct with good results. Veal calves have been butchered at home and sold dressed both to restaurant proprietors and to local dealers. This cut the cattle buyer out of the transaction and the calves did not have to be shipped. We obtained the tongue and heart and about three dollars more per calf than we would have received if the calf had been sold to a stock buyer. Such a buyer is often a useful middleman because many farmers do not have time to dress calves. It is not the most pleasant piece of work, and may be worth all a middleman would charge for it.

In selling red raspberries direct we have had good success. Buyers have driven out in their cars and bought by the crate. They have told friends and this has brought more orders. We have sold full boxes of clean firm fruit and received more per box than any dealers would pay. Next year a lot of our customers of last year will be back for more berries at canning time. It saves driving to town with berry crates and possibly canvassing for orders. With raspberries we have substituted ourselves for the middleman with good results.

But even here the middleman has a place. If we should have more berries than customers would drive out to obtain, we would sell to dealers and let them perform a service for us. We would not have time to peddle fruit from house to house by the box.

Dealers perform a service in the handling of eggs. So many producers are located miles from a large market center, and egg buyers have frequently formed the habit of buying eggs one dozen at a time. A farmer cannot afford to use his time in delivering small orders of eggs. He must sell by the crate to the middleman and allow him to perform the service of delivering the eggs to the buyers. If it were not for the cold storage business the egg business would be more risky than at present. When properly conducted the cold storage business is of benefit to both the producer and the consumer.

If eggs could not be stored there would be such a surplus in the spring that eggs would sell at very low prices and in the winter there would be few eggs for sale. The storage of eggs helps to divide up the supply and make eggs available even to consumers of moderate means at all times of the year. Farmers may some day be able to store their own eggs on a co-operative basis and thus perform the service of a middleman. It would be a very profitable business if properly managed. We find that dressed poultry sold

direct to the consumer more profitable than to dealers. The sales must be combined with other products. The farmer cannot afford to deliver one chicken if it takes time from other work. But dressed fowls can be delivered to regular egg customers. I mean the kind of customers that take from five to ten dozen a week so they are worth visiting.

But the farmer with a large amount of poultry meat for sale must depend upon the middleman unless he is close to a good city. For example, the small town trade cannot absorb many broilers. It takes time to dress them during the summer when other work is pressing. In such cases the farmer can often afford to sell the broilers live weight to the local dealer or commission man in a large market city. They take the birds and pay cash and place them where they are needed. I know from experience that this is a service of value during the summer when there are many crates of surplus cockerels to turn into money. A poultryman with several hundred of them often needs reliable agents in the market centers to sell the goods.

It is popular to kick about middlemen and sometimes we find out that they have made more profit on certain deals with us than we can make ourselves. Then a producer begins to look around and try to eliminate his agent. But very often he finds that there are not enough working hours in 24 to do all the things that must be done. It is then necessary to employ middlemen to help out with the marketing. Personally I believe that marketing conditions are going to be better in the future. Farmers are learning to patronize the honest dealers who try to do good work and the crooked dealers are soon spotted and given the kind of publicity that puts them out of business. I believe that most of the unnecessary middlemen are going to eliminate themselves while those that perform a service will remain for a long time.

The mode of life of many city dwellers makes middlemen a necessity. They buy in small quantities and live in houses lacking cellars or other storage rooms. The city flat dwellers seldom buy bushels of food at one time. He orders little bags of this and that over the phone and they have to be delivered by the middleman. A campaign to induce people to buy crops in season and store them would help to reduce their cost of living and also help the producer to place a large amount of food shortly after harvest. Farmers know that all the food they hold over winter in storage is not held from choice. They would much prefer to get their money out of most of it in the fall. City consumers often think that farmers only store food to get higher prices. Many producers would be satisfied with small profits if they could get their money in the fall. Here is a chance for the consumers to eliminate a middleman and store potatoes, eggs, cabbages, onions and other fruits and vegetables of their own use.

If the farmer is to serve as a middleman he must receive co-operation from the consumer. If the buyers wish to buy of middlemen because they can give extra fine and prompt service, then the farmer will have to sell to the middlemen. Often a high-class grocer can be a fine friend to a farm producer.

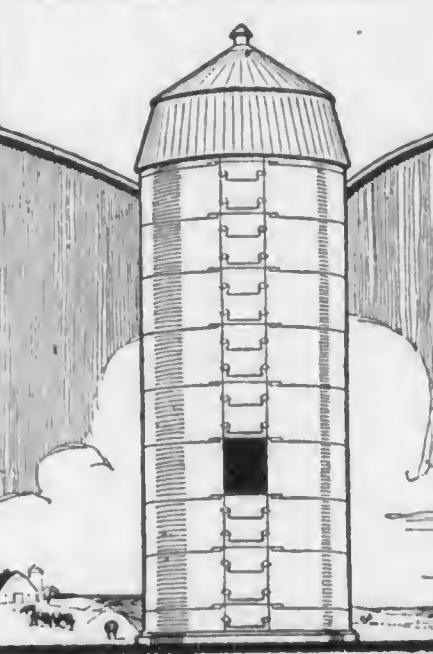
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The reason why the Unadilla sells two for one of any other silo in the East is because its patented construction keeps silage best and provides the easiest, safest, most economical way of storing and using silage.

The Unadilla door cannot stick or freeze in—it is opened automatically by simply raising the fastener, and gives a continuous opening through which the silage is shoveled, saving the heavy work of pitching overhead. These fasteners are also the ruins of the famous Unadilla door-front ladder—as easy and safe to climb as a stairway. Blows are easily, safely adjustable from this ladder, keeping the silo always in prime condition.

Write today for free catalog showing our labor-saving, silage-storing and safety construction. Learn how you can save on the purchase price by ordering this month.

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The Most Promising Legume Introduced in Recent Years

This new Annual White Sweet Clover has been acclaimed by authorities as the greatest of all annual legumes. It has shown six times the growth of medium red clover, and promises to save a year in crop rotation in the corn belt. Grows 5 to 8 feet same season sown. Early maturity. Greatest forage and green manure crop ever discovered. Grows well in any climate.

The Supply Is Very Short
There is but a very little Hubam available for distribution, and now is your chance to get in on the ground floor. 1 to 1½ pounds only required per acre for seed production.

We have a limited amount to offer, cleaned, sealed and certified by the Michigan Crop Improvement Association. To be released only for demonstration purposes in lots of 1 pound or less.

\$7 per pound, \$4 per ½, \$2.25 per ¼.
SEED DEPARTMENT
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Build your silo to last as long as you live to run your farm. Durable tile—first cost only cost. "Slip" blocks—stronger walls. Twisted steel reinforcing—steel hip roof—steel chute. Write for catalog.

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Officially Trap Nested
Mr. WHITE ROCKS led in their class at Woodland last year and rank second among all the heavy breeds. Hatching eggs from this same strain \$3.50 for 15, \$10 for 50, \$18 for 100 eggs. 100 old chicks, 50 cents each.

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BARRED ROCKS—Yankee famous egg laying strain—choice cockerels, \$5 to \$8. Hens from select pairs, \$2 per 15, prepaid. Chicks, Yards, East Canton, Ohio, R-2.

HATCHING EGGS from thoroughbred S. C. R. 1 Hens, \$1.75 for 15; \$9 per 100, prepaid.

Mrs. Leighton J. Kilham, Lebanon, Pa. R-5

TEAMWORK ESSENTIAL IN FATHER & SON PARTNERSHIP

The article B. A. Farmer and Son, in a recent issue of the Pennsylvania Farmer, was very interesting, and illuminating, as regards to the proportion of partnerships between fathers and sons.

It is an inspiration to see a father and his son, or sons, succeeding as partners and the tendency towards such partnerships argues well for the future of American agriculture.

However, some fundamental traits of human nature should be well considered in the formation of such partnerships. There must be a perfect seal of confidence between father and son. Fairness and tact must rule in all things, for a partnership between father and son, even the financially successful, can be anything but pleasant and cordial.

The farmer must be willing to allow the son, or sons, a voice in the formulation of the farm policy and in planning the farm management. Make the boy financially independent either by cash settlements at stipulated periods or by a joint bank account on which either may check. I consider the latter preferable. And in general he should recognize the sons' rights and talents as he would a partner's from outside his own family. There should be signed articles of agreement.

The son, of course, must be capable and trustworthy. Perfectly competent to assume entire charge in case of need, and ready to meet any emergency, or to shoulder any responsibility. He must have respect for the Senior Partner's more mature judgment and riper experience.

Both father and son must be willing to try and see both sides of any problem that will arise; for it is inevitable that differences of opinion will occur and it is essential that they may be discussed and settled with fairness and an absence of rancor.

As little flaws will mar the finest workmanship so petty bickerings will disrupt the finest organization. The person pronoun "I" must be superseded by the plural "we" and "mine" must be changed to "ours."

I know of a partnership that is far from satisfactory just on account of the unwillingness of the father to relinquish his arbitrary control. He cannot give up "I" and "mine." The junior partner has no say in the money matters whatever.

Another incident, in this same partnership, will show how trivial things can ruffle a smooth current. This young man had long cherished the creditable ambition to have his name on the farm stationery, along with his fathers. An agreement of partnership finally being consummated it seemed that his ambition was about to be realized but when the next lot of letterheads was delivered by the printer the father's name alone appeared on the letterhead. Imagine the disappointment and bitterness of the junior partner and the moral effect. The father never knew of the incident and never will and, incidentally, the father's name is still on the letterhead, alone.

Result: the son is still planning for that letter head with "Father & Son" on it but it will be His Son and He will be the Father.

I am not aiming to air my troubles in this article and am writing with the sincere hope this may show the light to some who may need it; for I must confess that I am the above mentioned disappointed—Junior Partner.



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Picture taking by the Kodak system is very simple now-a-days and less expensive than you think.

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P. D. FULWOOD, Dept., K, Tifton, Ga.

"even when there is no fungus"

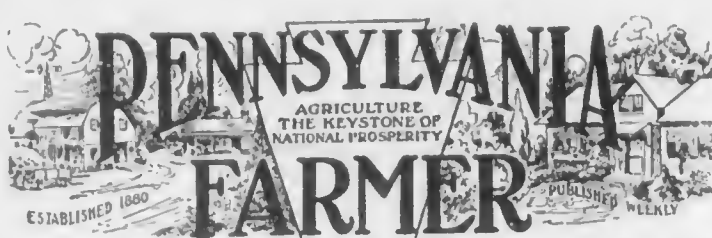
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REG. U. S. PAT. OFF.

Pyrox

TRADE MARK REGISTERED

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PHILADELPHIA, PA., APRIL 2, 1921.

VOLUME 49 NUMBER 14

OUR JOB is to serve our readers. Whenever you are puzzled, write to us and we will help you if we can.

—The Editors

Granted sincerity of purpose, the great powers of the world should find no insurmountable difficulty in reaching an agreement which would put an end to the present costly and extravagant expenditure on naval armaments.

—Theodore Roosevelt.

State Fair Bill Hearing

A HEARING on the State Fair Bill was held by the Appropriation Committee on Wednesday of last week. The proponents of the bill represented nearly every branch of agriculture and stock raising in the state, and representatives of the State Chamber of Commerce and the State Bankers' Association were also present and urged the establishment of a state fair. Seldom have we seen a gathering of the varied industries of the state so unanimous in their agreement of any project. Every line of production and commerce realizes the great value of an adequate state exhibit where the products of the state may be brought together for the mutual help and enlightenment of the people. It is the cap-sheaf needed to complete the great educational institutions of the state. The opponents of the bill, chiefly the members of the County Fair Association, did not offer any opposition, but have asked for another hearing at which to voice their objection.

Save the Quail

THERE IS urgent need for farmers and lovers of bird life in general to come to the immediate support of the bill to put the quail on the list of song birds and thus have it perpetually protected by law. There is little doubt but what it would be passed by the Legislature if reported out of committee, but it is being held there thru the influence of sportsmen and the State Game Commissioner and unless the public brings a strong pressure to bear upon the House Committee on Game the bill will die in committee. A hearing has been called for April 5, at 2 o'clock at the Capital and every interested person should attend. If impossible to attend, write a letter to Hon. Charles W. Catlin, Chairman Game Committee, Harrisburg, Pa., demanding that the bill to protect quail be reported out of committee. DO IT TODAY.

Aside from all sentimental reasons for preserving the life of the quail, the economic reasons should be sufficient to cause every sensible person to use his influence to have this bird protected from the hunter's gun. The quail is the farmer's and fruit grower's greatest natural aid in fighting insects and the spread of noxious weed seeds. No other bird subsists so entirely upon insects and weed seeds. The quail is not

Pennsylvania Farmer

a migratory bird and the rigorous winters of our section are sufficient to keep its increase undeniably low without slaughtering it.

We have no wish to engender any ill-feeling between sportsmen and farmers and there will be none so long as hunters show a proper regard for the rights and welfare of farmers, but in regard to the bill in question sportsmen should remember that farmers and land owners could if they would protect not only quail but all other game upon private land within the state by posting it against trespass. We would not urge the general practice of this legal right except as a last resort.

Export Figures

WHILE there has been a gradual falling off in the export trade during the past few months it must be remembered that the reduction in volume is not so great as it appears. The figures usually printed are in dollars representing the value and it must be remembered that prices per unit are materially lower than those of a year ago. In February, 1920, the exports of cottonseed oil amounted to \$4,515,000 and in February, 1921, 19,000,000 pounds more was exported but the value was \$200,000 less. In a measure the same thing holds true of meat and breadstuffs. The exception to the general rule is in mineral oils of which the amount exported increased 13 per cent while the value increased 36 per cent. If one is to form a correct judgement of the export trade today in comparison with that of 1920 and before, he must take into account the reduction in prices.

However, trade is falling off and the necessity for developing foreign commerce anew is engaging the earnest attention of business men and statesmen. There is a very general discussion of means for establishing some kind of trading with Russia and the central countries of Europe. One of the most perplexing problems is that of insuring payment for goods sold in those countries. There is no question but what the return of normal times and full production in this country is dependent to a great extent upon a resumption of normal relations with foreign markets. We have the equipment for producing more in every line than can be absorbed at home and hence talk of closing our markets to foreign trade is absurd. Some regulation of such trade, however, is necessary but the terms of regulation must treat all industries alike.

Business Conditions

THE GENERAL improvement in business which all hoped would take place in March did not materialize. Of course, seasonal buying increased trade to some extent over that done in the first two months of the year, but it was far below the usual March business. Dealers and merchants are endeavoring to reduce their stocks but are not inclined to place new orders until buying becomes more brisk, while, on the other hand, buyers are evidently holding off until prices are further reduced. All this in turn tends to slow down or stop industry, and consequently the buying power of the public is gradually reduced. In almost every line buyers are not inclined to buy beyond immediate necessities. There is nothing organically wrong, as a physician would say, with the economic system. Failures are few and financial institutions are strong. We may carry the simile a little farther, however, and say there is a general feeling of lassitude superinduced by weak heart action.

Probably one of the greatest causes of hesitancy in the resumption of industry is that of wages. It is claimed that it is impossible to operate productive industries at present price levels and market conditions and pay old-time wages. In some industries there has been an amicable adjustment of the wage question while in others the workers are unwilling to make a scale to fit the new conditions. In two fundamental lines, coal mining and transportation, the hitch in adjustment is retarding nearly all other industries.

Reports indicate that in spite of much newspaper talk about the threat of farmers to reduce production about the normal acreage will be planted. The farmer cannot seriously interrupt

the rotations and system of his farm without serious loss. Wages for farm work have fallen from 20 to 50 per cent from those of last year in all parts of the country. Feed prices are much lower and there has been a general reduction in the price of farm machinery. Fertilizers, also, are tending downward.

Our Washington Letter

As a result of the get-together movement that has been promoted in Washington, the executive committees of seven leading farmers' organizations will hold a conference at the Harrington Hotel in this city on April 14th, for the purpose of formulating a legislative program to which all of these organizations can subscribe. It is believed that all seven associations can agree in support of the truth in fabric, cold storage, Muscle Shoals nitrate plant development, farmers' collective bargaining, and packer control legislation, and on the more important items in the tariff schedules.

After the various items have been unanimously agreed upon an affirmative statement will be issued declaring that the seven organizations are in complete accord on these points and a united presentation of the legislative program will be made in Congress. The National Grange, American Farm Bureau Federation and National Milk Producers' Federation are among the seven cooperating organizations. Heretofore there has been some team work along general lines among the various organizations in the Congressional hearings, yet differences in views and minor points have had a tendency to weaken the farmers' case. This move is believed to be the most important advance step taken by the farmers' organizations in a long time.

Senator George W. Norris, of Nebraska, has been made chairman of the Senate Committee on Agriculture. There was considerable opposition to Senator Norris on the part of ultra conservatives because of his so-called radical views on certain economic questions. His appointment, however, will please the progressive element of the Middle West. Senator Page, who was ranking member of the committee on agriculture, retains his place at the head of the committee on Naval Affairs, and Senator Kellogg of Minnesota is placed on the Foreign Relations Committee.

Senator Arthur Capper of Kansas says that there is evidently a misunderstanding prevalent in some sections of the grain belt as to the purpose of the Capper, Tinscher and other bills designed to regulate the boards of trade and grain exchanges. He says there is no intention on the part of those promoting these bills to entirely do away with hedging. These bills do not provide for the elimination of hedging, but aim to cut out the evils of hedging. Until a better system is devised, it is thought best to preserve the legitimate functions of the hedge. The records show that 95 per cent of the transactions in futures on the grain market are for gambling purposes only, with no intention of buying or selling the grain, and this is the evil that does the damage to the producers.

A new farmers' collective bargaining bill is being drafted with the aid of specialists in market co-operation in the employ of the farm organizations. Senator Capper says the bill will be introduced early next month and he thinks it will get thru Congress with the united backing of the organized farmers.

With more than fifteen billions of dollars to be raised by the government during the next three years, tax legislation is certain to be in the forefront of Congressional discussion this spring. The March installments of the income tax will be more than \$600,000,000, exceeding the Treasury Department estimates, nevertheless they are \$300,000,000 less than last year, and the belief is current that the heavy decline in the earnings of corporations and individuals the past year, will be responsible for a corresponding decline in revenues from the income tax, and Congress will be compelled to devise some new method of supplementing the present system of raising money for the support of the government. Congressional leaders are now devoting much time to this subject.

It is now definitely settled that the emergency tariff bill vetoed by President Wilson will be re-enacted by Congress just as soon as possible, if the administration leaders have their way. The only change agreed upon is a reduction of the time it will run from ten to six months. This change is made, according to Senator Capper, for the reason that a permanent tariff law will go into effect before the end of the six months. In order to get the emergency tariff thru without delay, Senate leaders have agreed to limit debate.

Following the emergency tariff will come the enactment of an anti-dumping law imposing additional duties upon foreign goods which are brought into this country at prices below the fair value in the exporting country; a law providing for American valuation of imports as a means of eliminating the foreign exchange factor; a permanent tariff bill and permanent revision of the revenue laws.—Elmer E. Reynolds.

April 2, 1921.

April 2, 1921.

HARRISBURG LETTER

The Home Stretch.—The Pennsylvania Legislature is swinging into the last quarter of its 1921 session and the pace is not swift. The results will be mediocre when compared to the last half a dozen sessions and at this point it looks as though a Legislature would repeat what it has often done in the second term of a governor—pass appropriations in excess of the revenues and put it up to the Governor to do the cutting. The problem of this session ever since the program was shelved has been to make a sum go into another sum only two-thirds as big. The lawmakers have been no more successful than a country school boy. Just at this period the appropriations have piled higher than ever and there is a marked inclination not to pass any revenue raising bills and at the same time to avoid reducing any of the state employees or to lop off any of the money voted to charities not under state control. The opportunity presented for financing the state on business lines let slip this year is one such as may not come again in decades. Instead of embracing it the State Administration and the legislators have hustled around seeking new sources of taxation and when they have been found dropping them off like hot pokers and going after something else. With the studies of an expert in economy and government before them they have "played for place" in a way that makes the home stretch of the session a rather sad spectacle.

The Liquor Bills.—The House of Representatives having voted down repeal of the Brooks high license law with search and seizure it will now receive the Governor's bill, which would amend the Brooks law and in opinion of many students of the liquor mess, provide saner provisions than the Martin bill. The administration bill will not want for teeth, but will be along different lines from that defeated. Just what will happen to it with the liquor people flushed with victory where they expected to be defeated and some of the Brooks law repeaters mad enough to vote against anything that would retain any feature of that law is as interesting as to what legislators are going to do about the equal rights bill. This latter measure is a biennial visitor.

Farmers Can Pick Now.—State Employment reports indicate that the farmers of Pennsylvania can pick their employees now. Every state office reports applicants for farm jobs and farmers are selecting the most experienced. They have been able to select those raised on the farm and in some instances have succeeded in getting help at pre-war wages and even having contracts signed, especially where houses have been furnished. And the foreign farmer immigration does not appear to be amounting to so much after all. Will Start the Fair.—While the opposition to a State Fair seems strong enough to prevent voting of the appropriation asked to buy a site it is commonly reported the Legislature will pass an act creating the commission and providing for expenses for inspections and other preliminary matters. This will start the fair, although not the way many people wish.—Hamilton, Harrisburg.

NEW YORK LETTER

Cattle Sell Slowly.—The first day of the big Holstein cattle sale at Liverpool, where 300 choice animals were to be sold, was a little disappointing to breeders. The highest received was \$280, and young stock sold as cheap as \$20. There never was a better time for new beginners to get stocked up with high-class purebred animals than now, it is believed.

Recent Legislation.—After a bitter fight in the Legislature the dry enforcement bills passed both houses, and went to Governor Miller yesterday. The bills place the burden of enforcement on local peace officers. It is felt that with the present extra work ensuing on the crime wave that such enforcement will test the powers of local police to the utmost, but that such enforcement is one of the big needs of the day. One bill will permit recovery of damages from the person selling the liquor if an intoxicated person causes or receives

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injury or accident. Legislation to provide additional state fair buildings will not pass owing to the Governor's economy program.

Sirup Sales.—A good supply of maple sirup has been sold on the Syracuse public market at \$3 a gallon. Other makers in other sections are selling as low as \$2 to grocers and private trade.

State Fair Posts.—Prof. E. S. Savage, of Cornell, will superintend the cattle department at the state fair the coming year, and E. S. Hill, a Peruville farmer, will superintend sheep and swine.

Inside Parleys Closing.—The indoor meetings of the Farm Bureaus are drawing to a close for the year, to give place to outdoor events and demonstrations. Barn and field meetings are being arranged for by the Farm Bureaus of the state. The sheep breeders are to have a new series of meetings, with W. T. Grams of Cornell in charge. The first demonstration flock of sheep ever gathered will be used in the course of a series of barn meetings to teach different things such as the use of purebreds, disease control, feeding, forage and crop rotation, care of wool, etc.

Notable Record.—An Onondaga teacher, Miss Carrie Paddock, is soon to resign, after 48 years of service in the public schools of the city. Like several other highly valued veteran teachers, she is able to call most of the city by their first names, having seen them grow up under her tutelage. The pension given such retiring teachers is one-half the average salary for the last five years.

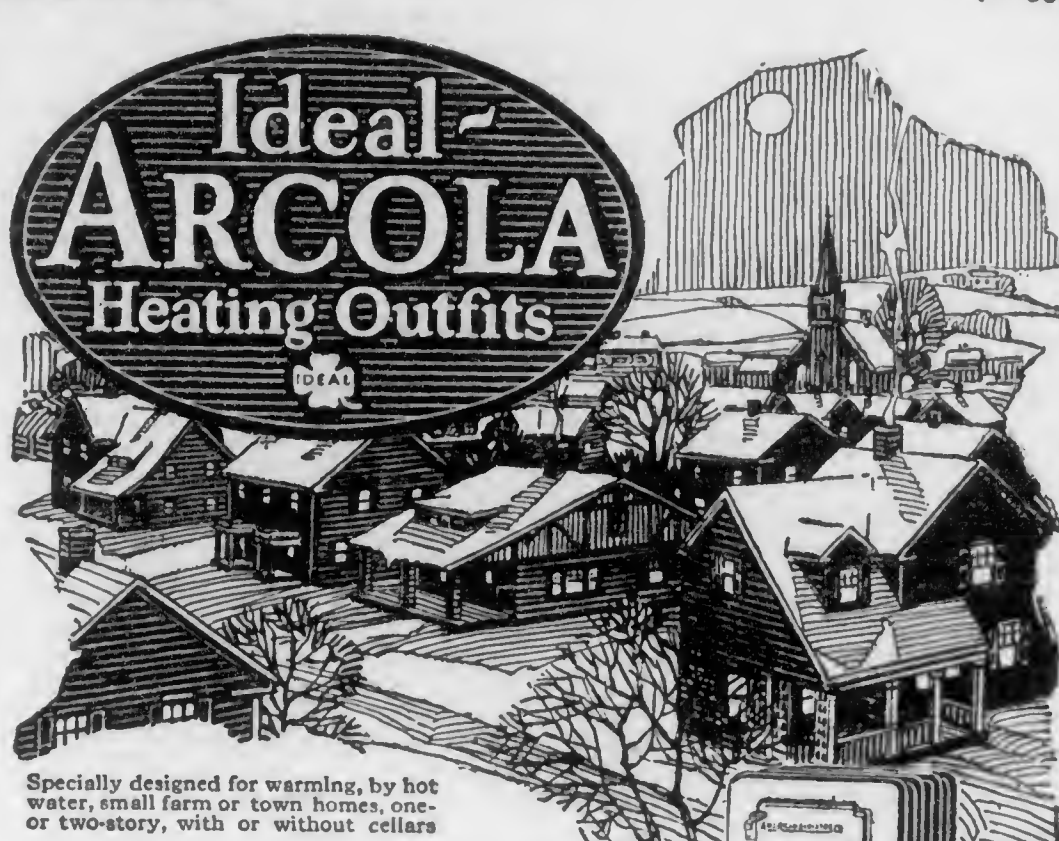
NEW JERSEY NEWS

Legislature to Adjourn.—The 1921 session of the One Hundred and Forty-fifth Legislature will adjourn sine die on Friday afternoon, April 8, at 3 o'clock. A concurrent resolution introduced in the Senate by Senator William B. Mackay, of Bergen County, majority leader of the Upper House, and passed by that body, and later, presented to the House on motion of Assemblyman Harry T. Rowland, of Camden, majority leader of the Lower House, and adopted by that body, provides for the action. While the appropriation bill, which makes provision for more than \$15,000,000 for the operation of the State Government for the fiscal year beginning on July 1 next, has been favorably acted upon by both of the branches of the Legislature, there is still a mass of several hundred bills not yet acted upon in the Senate and House.

An action of the Senate of much pleasure to the residents of the rural sections of the state was the passage over the veto of the Governor of the Case State Constabulary Bill, providing for a police force to be located in Trenton and to be assigned to any part of New Jersey, where trouble arose necessary for such a force. During the legislative session held on the measure at the State House, recently, the representatives of the agricultural interests spoke strongly in favor of the bill, it being stated that such a policy body would be able to prevent crime in the less populated parts of the state.

Union labor organizations opposed the measure on the ground, that the police were not to be used to aid in the prevention of trouble and the apprehension of criminals but to interfere with workmen on strike. A measure providing for a secret ballot for school elections, and one allowing pensions to county detectives, have also been acted upon favorably by the Upper House, while one that would amend the State Constitution to increase the terms of sheriffs from three to five years.

Despite a fervent appeal made to the members of the House to pass a resolution that would change the death penalty and substitute life imprisonment for murderers, they fought the bill and it was defeated. The House has received a report from a special committee named under a resolution, which has recommended that \$50,000,000 be appropriated for the needs of the State Highway Department and \$14,000,000 for the needs of the Department of Institutions and agencies.—Kelly, Trenton.



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HORTICULTURE

Pruning Young Fruit Trees By J. P. STEWART

THIS is the time of year when many farmers and orchardists are making plans for their spring plantings of young trees. One of the questions which always comes up in connection with this work is that of the method of pruning to be followed.

The writer recently had the duty and privilege of supervising and assisting in the planting and pruning of over 26,000 apple and peach trees for one man. This is a matter of little importance except that it made it desirable for us to reconsider the whole field rather carefully, and make sure that our own ideas were fully up to the times and in accord with the best and most recent investigations on the subject. One of the surprising results of this reconsideration was the discovery that very few, even of the professional horticulturists and pomologists, had any apparent acquaintance with the results and conclusions of the principal experimental work that has either been done or is now in progress.



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ress on pruning. As a result, most of their statements and recommendations are now apparently in line with what would have been considered good practice around twelve to fifteen years ago, but most of them totally ignored the important actual results that have been reported by competent investigators since that time. In fact, a rather larger percentage of the best commercial growers have come into line with what should now be considered sound practice, than of the professionals to whom they are supposed to look for advice.

In the past, so many unfounded and often conflicting virtues have been ascribed to pruning, that it may be a hopeless task to attempt any general correction, even if we assumed the ability. But it will probably do no harm to state what we attempted to do in the case above mentioned, and then cite some of the underlying reasons.

In the first place, we aimed to

"head" our peach trees at a height of at least thirty inches, with about a six-inch variation either way depending on the tree, and aimed to save at least five good limbs or buds. The limbs were usually clipped off just beyond their first or second bud in proper locations below the point of heading. This height may seem like rank heresy and a grave mistake to the "low-headed" enthusiasts, who seem to be under the impression that it is necessary to cut the trunk off at about the height really desired for the lowest limb, in order to get a low-headed tree. Their method will get the low head all right, if the stump doesn't die, but it leaves no space for the other limbs to form except below or alongside of what should be the lowest limb, and it is also inevitably seriously reduces the amount of foliage available for growth and roots system formation during the entire first season. It is also likely to develop a very spreading, low-branched, bush form, which is especially objectionable in a "fil-

ling normal trees was made in the trees that were cut back to 36 inches at planting time, while those cut to a height of 18 inches made the least growth. The growth in the higher trees was also usually well distributed. Trees of the smallest caliber—three-eighths of an inch—made good growth when cut as low as 6 inches, but the larger-sized trees were markedly depressed by such cutting. On trees that had been badly dried out before planting, the greatest total growth was made on those cut to 30-inch trunks at planting time. The smaller grades of trees suffered most by drying, but were naturally best adapted to the extremely low heading. Trees of the half-inch grade, cut to 24 inches when set, usually gave trees from which a desirable commercial form could easily be developed.

They also found that one-year-old peach trees of the five-eighths or three-quarter-inch grades usually made the largest average growth, when properly pruned, and that trees in general failed to develop branches well upon the twelve to twenty-four inch section of the trunk, chiefly on account of the usual scarcity of good buds in that section. They conclude that peach trees at planting time should not be pruned to any definite height, regardless of all other factors, but should be pruned somewhat according to grade and the character of the stock, as all trees start into growth best if there are plenty of well-formed buds (or limbs) just below the point of cutting.

Results in New York

The important influence that pruning of the tops exerts in retarding growth is generally overlooked, and has only recently been brought out clearly in experiments by Chandler at Cornell. He not only finds the usual marked reduction in top growth as a result of pruning the tops, but also finds a similar sharp reduction in root growth from the same cause. In one experiment some young apple trees already established in the orchard were left unpruned, "others of the same size had the lower branches removed to a height of about twenty inches, and still others, in addition to this pruning, had most of the branches except the leader shortened back. In this case the root growth of the most severely pruned trees during that summer was but fifty-two per cent of that of the unpruned trees, and the top growth fifty-seven per cent." And this reduction all came from simply pruning the top.

In another case, some four-year-old peach trees were cut back severely in the spring of 1916 and again in the spring of 1917. "At the end of the latter season, when the prunings were added to the weight of the tops, it was found that the top growth had been as great on the pruned as on the unpruned trees. The root growth, however, had been greatly reduced by the pruning, the average root weight of a pruned tree being but twenty-seven pounds as against thirty-seven pounds for the unpruned trees." Since this reduction, moreover, had occurred only in the last two years of a six-year growth period, it appears that the root growth on the pruned trees during these two years was hardly sixty-five per cent of that on the unpruned trees.

Considerable pruning is of course needed on peach trees, after they have become established in the orchard, both to increase their annual twig growth and to keep their bear-

Results at the Jersey Station

In the peach pruning experiments in New Jersey, for example, reported by Blake in 1916, it was found that in general the largest growth

ing wood as low as possible, but it should be clearly noted that the "increased twig growth must always come at the expense of a reduced top."

In the pruning of the apples, in the planting above-mentioned, the central leader type—with three to five side limbs and preferably four—was adopted for several reasons, most of which have already been given in this column. Some of the present conclusions of an interesting test of different forms for the apple, at Cornell, is of interest in this connection, however. In these so-called training experiments, attention has been centered on three forms: "the natural form, where very little pruning is done; the central leader form, whereby pruning back the branches, the growth is directed into the central upright trunk; and an open-head form, where about five branches are permitted to grow, each being trained with a main leader, the upper branch being kept the largest." In Chandler's words, "It has required more pruning to secure this last form than either of the others, the trees have been dwarfed in size, and the fruiting has been rather markedly reduced. It is possible that the latter form may give a better fruiting tree when older; as to this we have no evidence. We can only say that it costs money to get such a form, since the fruiting is reduced during the early life of the tree."

These conclusions are of special interest, in view of the rather wide use of this type during the last twenty years in the commercial sections of Southern Pennsylvania. In that section, however, at least some of the larger growers are not especially pleased even with the ultimate fruiting form which this type of tree produces.

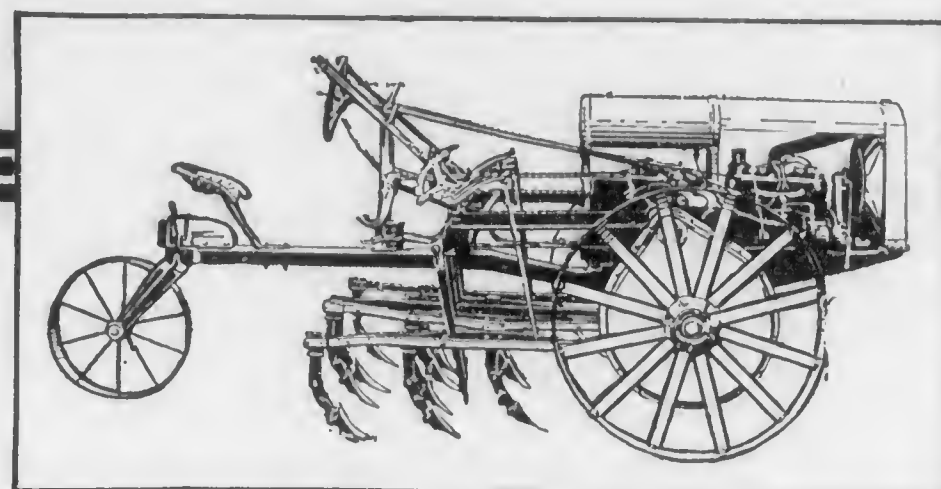
REPAIRING THE FENCES

The pasture fence must be renewed before the rush of spring work comes. While cutting timber and firewood the last two or three years we have accumulated more than three hundred posts 6½ feet long. We have no cedar or locust (wish we did) but chestnut and white oak will last many years. Pin oak, maple, elm, gum, ash, beach, birch, etc., do not last when used for posts. Our posts are stacked near the pasture ready when needed.

We tried to get six spools of barbed wire at our local hardware stores. However, they did not have it in stock or if they did they wanted a profit on the excessive prices they paid last year. Therefore, we got into communication with a fence company that advertises in this paper. They are to furnish the wire at once at a newly adjusted price. Soon it will be in our barn ready to be used when we are ready for it. Badly rusted wire and weak posts will be eliminated without hesitation. It is exceedingly expensive "reaction" to chase the cows which are sure to get out thru weak fences just when we are in our busiest days. —R. W. DeBaun.

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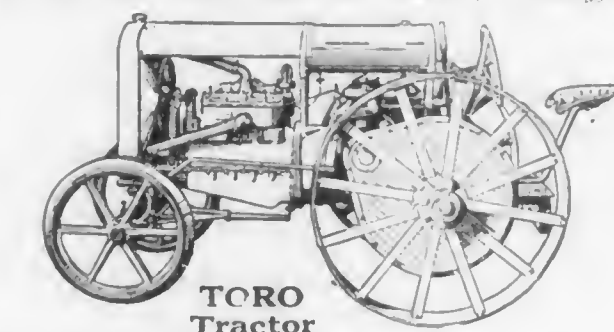
I feel able to give a few of the things it will do. "I have used it to drag roads, cut outs, haul manure, make hay (pulling a hay loader behind), disc, harrow, cultivate, and stir plow. I have pulled a common horse drawn sulky (16-inch) behind the cultivator, turning twenty inches, seven inches deep with perfect ease.

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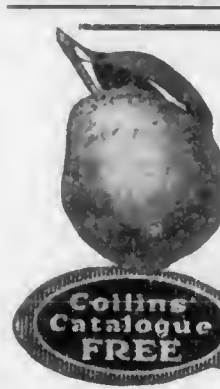
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Tractor**

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Helps on Raising Dairy Calves

By MELVILLE WETTACH

THE raising of dairy calves is a subject of importance to all dairymen, particularly if one is raising purebred stock. Owing to the scarcity of good cows, dairymen are taking a risk when buying cows, and if the farmer can get good ones, he pays a high price for them. Raising heifer calves from his own herd will not only save the farmer money, but it will also prevent the introduction of contagious diseases into his herd from outside sources. By raising the heifer calves of good ancestry, he improves the quality and the market value of his herd and increases the herd's production of milk and butterfat.

Feeding

The calf should be allowed to remain with the cow for the first few days in order to secure the colostrum milk which starts the digestive processes. After the calf is two or three days old it may be taken from the cow and put in a pen with a few other calves.



A Calf Which Weighed 142 Pounds at Birth. Owned by the Pennsylvania State College

It is useless to try to teach the calf to drink unless it is hungry. Coaxing the calf ten or twelve hours after it has been taken from its mother, by letting it suck one's fingers and gradually leading its head into a pail, is the best method of teaching to drink. Ordinarily the calf only has to be coaxed a few times in this manner before it learns to drink with little difficulty.

The young calf should be fed from two to five pounds of its dam's milk three times a day. It is better to feed four times a day if the calf is weak. Remember that there is more danger from overfeeding than from underfeeding.

When the calf is three weeks old, skimmed milk may be substituted at the rate of one pound of skimmed milk per eight pounds of live weight for the larger breeds and one pound of skimmed milk per ten pounds of live weight for the Island breeds. As in the feeding of whole milk, the utensils must be kept thoroughly clean and

washed and scalded after each feeding. Do not feed the foam off of separator milk as this will cause the calves to bloat and scour. Increase the amount of skimmed milk gradually and if plenty is available, it may be kept up after the calf is six months old. To get the best returns it is not advisable to feed over twenty pounds a day. Do not over-feed on skimmed milk believing that it is "thin." Skimmed milk is a nutritious feed and will surely cause trouble if fed in too large quantities. Feed more according to the capacity and condition of the individual.

There are numerous "skimmed milk substitutes" on the market and the following is as good as any. It is known as the "Purdue Mixture" and consists of equal parts by weight of hominy feed, red dog flour, linseed meal and dried blood. This must be thoroughly mixed and this is best done by mixing in small quantities. One pound of the dry calf meal is substituted for nine pounds of the skimmed milk or about four and one-half

their packing, it is better to mix them with some other feed. Bran alone is a starvation diet. Another satisfactory ration is one composed of five parts of ground oats, three parts of wheat bran and one part of each corn meal and linseed oil meal. Linseed meal has a tendency towards causing scours and it is best not to include it in the ration of very young calves and those that are scouring. Corn products, except corn gluten which is too concentrated, are good feeds for calves. There is no danger from overfeeding with grain; give them all that they will clean up. Keep the feed box renewed with fresh feed, but in such amounts that the last feed is always cleaned up before fresh feed is put into the box. Never feed any stale, wet, musty or mouldy feed as this will cause indigestion.

Hay may be fed when the calves are ten days or two weeks old. Feed in small quantities at first (especially alfalfa), and only give them good, clean, fresh hay until they are ten weeks old. After that age they will eat any kind of hay with no bad results. The hay should be fed in a rack so that the calves will not waste it by tramping down.

Milk and grain are not all that a calf needs. Many believe that, since skimmed milk is fed there is no need for water. This is untrue, particularly in the summer months. In the winter they will not drink as much but they should have the opportunity to do so. They should have plenty of fresh, clean water each day after they are two weeks old. On hot summer days, calves under six months should not be fed large amounts of water in the middle of the day. When the weather is so hot that they pant, there is danger from apoplexy if they are given a quantity of water. It is better to water them in the morning and afternoon when they are out in the hot sun all day.

Salt is necessary for a calf that is consuming roughage and it should be supplied daily, usually with the grain feed.

Whey, buttermilk and sour cream should not be fed to calves under four months old. Oil meal makes a good feed for older calves provided there is scouring. Wet alfalfa is a bad feed for calves as it causes bloat. Calves over four months may be fed fresh cow's milk, boiled, but it should be fed in limited quantities and only when sweet to younger calves. Flaxseed should not be fed as it will cause scours.

(Continued Next Week).

"For sale," read the advertisement in the local paper, "a cow that gives ten quarts of milk a day besides two grandstones, a lot of farm tools and a set of harness."

"We've had a mighty dry summer," said the Senator from Minnesota, who was exhibiting at the National.

"Dry summer?" asked Falfurrias El, who lives in the State of Texas. "Man, you ought to come down to my country. Why, we have bullfrogs down there eight years old that haven't learned to swim yet!"

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Farmers and Gardeners are learning that it pays big in earlier and bigger yields to use our own field grown plants. Early Jersey, Charleston Wakefield, Succession, Flat Dutch, Express, 20th, 21st, 22nd, 23rd, 24th, 25th, 26th, 27th, 28th, 29th, 30th, 31st, 32nd, 33rd, 34th, 35th, 36th, 37th, 38th, 39th, 40th, 41st, 42nd, 43rd, 44th, 45th, 46th, 47th, 48th, 49th, 50th, 51st, 52nd, 53rd, 54th, 55th, 56th, 57th, 58th, 59th, 60th, 61st, 62nd, 63rd, 64th, 65th, 66th, 67th, 68th, 69th, 70th, 71st, 72nd, 73rd, 74th, 75th, 76th, 77th, 78th, 79th, 80th, 81st, 82nd, 83rd, 84th, 85th, 86th, 87th, 88th, 89th, 90th, 91st, 92nd, 93rd, 94th, 95th, 96th, 97th, 98th, 99th, 100th.

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Attention! Farmers and Truckers
Buy your seed corn from Grover at saving prices. Showed 800,000 bushels of yellow dent pure strain. Write for prices on quantity wanted.
S. C. Lynne, Pemberton, N. J.

SAY you saw the advertisement in Pennsylvania Farmer when you are writing to our advertisers.

TALKS WITH THE BOYS

EDITOR'S LETTER

To the Boys:

Boys, what are you doing? You may think this a strange question to ask but that is just what we all want to know about each other. Some of you live in New York State and some in Maryland, some in New Jersey and some in Pennsylvania and other states. You are all living under different conditions and I know that you are all interested in each other for if you were not you would not be reading this page. What worth-while thing are you doing that you think other boys would be interested in hearing about or learning to do? Tell us about them.

Perhaps you have noticed that many of the letters that have been printed on this page have been much alike. That is not because those of you who have written have tried to get ideas from each other's letters but because you were afraid that we would not all be interested in what you were doing. I am not saying this to find fault with any of the letters that have been printed but simply to suggest that you all tell more about what you are doing and reading and thinking. Have you taken a hike to some interesting place near your home? Are you planning a baseball team for this season, are you in any boys' clubs, are you having any success with your bird houses, have you built any useful article for yourself, have you thought of anything that you could do that would please Dad or make Mother's work any easier? Write us about these things as well as the hundreds of other things that we are all interested in. Don't think because you do something or see something useful or interesting every day until it becomes tiresome that the rest of us would not like to hear about it.

Every boy who reads this page can write a letter that will be helpful and interesting to every other reader, whether young or old. We know that, for the grown-ups as well as the boys have been writing to tell us how they enjoyed the letters.

Now, let's all do our best to make this page really worth while. It is all yours so the whole thing is up to you. You have made a fine start. Let's keep on improving and try to make each page a little better than the last one.

*Sincerely,
The Editor*

LETTERS FROM THE BOYS

Dear Editor—I am glad the Pennsylvania Farmer is having a Boys' Department. We have been getting the Pennsylvania Farmer for about two or three years and all of us think it is a very good paper.

I live on a farm three miles from Petersburg, Pa., and I like to live in the country. I have three cows to milk every morning and evening and in the spring, I have to help plow and I generally feed and raise the chickens and turkeys. I think it is very nice for a boy on the farm to help his parents to do their work.

I am going to school now and I am in the eighth grade and am 13 years old. We sell our milk to a large milk dealer in Philadelphia.

I hope to see many other letters

from boys in the Pennsylvania Farmer next week.—Ivan H. Laird, Huntingdon Co., Pa.

Dear Editor—I am very glad we take your paper because I can read the boys' letters and I think every boy should take interest in it.

Our subscription ran out last February, but I got to work at my grandfather with whom I live and, asked him to take it, especially that I might read the boys' letters. He renewed and told me that he also liked to read them. Boys, what do you think they did for me?—they sent me a grand school-box—the best you could get anywhere.

I live on a farm at Willingboro, called the "Old Mill Creek Farm." I have lots of fun, altho I have no brothers and sisters to play with, so I play with my pets which are white cats, a nice dog, some bantams and white rats.

I am twelve years of age and will be 13 July 27, 1921. I was born in the year of 1908. I am in the sixth grade at Willingboro Public School. —Wm. G. Hunter, Burlington Co., New Jersey.

Dear Editor—We get the Pennsylvania Farmer and I am glad to see you have a page for the boys.

We have six hogs, and two of them, a black and a white one, are mine to raise. We also have two dogs, three cats, four horses, and one automobile. Our farm consists of forty acres of land.

I go to school and it is not far from my home. I am going to build some bird houses soon.—H. R. Himes, Lancaster Co., Pa.

Dear Editor—I like to read the Boys' Page in the Pennsylvania Farmer. We live on a large farm in Mifflin Co., Pa. I have four brothers and one sister. Four of the boys go to school and our teacher's name is Mrs. Hartzer. I am eleven years old and in the sixth grade and study eight books.

I belong to a Boys' and Girls' Club and have a helper which is two and one-half years old. She is a Milking Shorthorn and took second prize at the Lewistown Fair last Fall. She has a roan bull calf, two weeks old. My father is a breeder of Milking Shorthorns and Duroc-Jersey hogs.—Irwin Russel Yoder, Mifflin Co., Pa.

Dear Editor—I have been reading the Pennsylvania Farmer and saw that you have a Boys' Page. I am glad that you are having one.

I am in the sixth grade and am ten years old. I live on a farm about two and a half miles from our school. We go to school in a wagon.

I have a pig and am also raising a calf on oatmeal—I have raised two others, one on oatmeal and milk, and the other on a calf meal. We have twelve cows on our farm. I have lived on a farm for about two years and like it very much.

I read the articles about bird houses and I would like to know what kind those who have had experience with them, would advise for the robin. We have a lot of them here. There are also some greenish-black birds here that are not quite as large as robins.—Edward Ambruster, Salem Co., N. J.



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Proof Against Weather, Fire, Water, Lightning

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Beautiful Buff Rocks and Polite Eggs, \$1.50 for 15. **CHESTERDOWN, MD.**
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WHITE LEGHORNS
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YARMOND POULTRY FARM, Chambersburg, N. J.

PASSING EVENTS IN PICTURES



1—Miss Virginia K. Gunter, of New York, took a ride in a seaplane and almost landed a 70-pound fish. A second after this photo was taken the young lady's rod broke.

2—Colonel Theodore Roosevelt, who has been appointed Assistant Secretary of the Navy.

3—U. S. Coast Guards lighting one of the gas buoys (floating light houses) in Pollock's

Rip Slue—known to mariners as the "Graveyard of the Atlantic," off Cape Cod. President Harding greets his people with the famous Harding Smile.

5—In order to test his invention—a Safety Suit for use in case of shipwreck—Oscar A. Youngren spent the night in the icy waters of the Hudson River. He is shown here eating a little lunch, with a floating

cake of ice as a table.

6—A sister of the Czarine of Russia was buried in this Historic Russian Church at Palestine.

7—Ship left on dry rocks by receding tide—was wrecked in fog off British coast.

8—Francisco Villa, former revolutionary chief, with his two children.

9—Andrew D. Mellon, Secretary of Treasury.

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Of Interest to Farm Women and Girls

Malnutrition—Its Meaning and Causes
By PEARL MacDONALD, Penna. State College

MALNUTRITION means poorly nourish or undernourished. It signifies a low physical condition, a below-par state of health.

When a child is well physically and has the right kind of food to meet its body needs, it has rosy cheeks, clear complexion and bright eyes. It is happy and full of life and energy, plays hard, enjoys its food and sleeps well. Its muscles are good and its body sturdy.

The undernourished child shows it in many ways. Its eyes are usually dull, and it does not have rosy cheeks. It is generally underweight, and because it does not have sufficient weight to support its height its shoulders generally droop and its shoulder blades often protrude. It may appear to be fat, but the flesh is not firm. It tires easily, and does not sleep well. It is likely to be nervous and irritable, and notional about what it eats.

There are all degrees of malnutrition, from that in which the children are only just a little bit under par

Importance of Sleep

In childhood the body is built up. And at the same time that the body is growing the various tissues are being used up by play and work; even studying uses up a considerable



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to those where they show it in a very marked degree.

Causes of Malnutrition

There are a number. Following are the most important ones:

Food Lacks.—If food containing materials for making bones, muscles, nerve and other tissues of the body is not supplied in sufficient amount and form for the growing child, obviously the child will be undernourished with all the attending ill results. You cannot operate a machine without fuel and lubricating oil. The human body is a machine, and a very intricate one. Neither can you operate a machine with any of the parts broken or worn out. Just so you cannot keep the human machine in good running order without the right kind and amount of food, and right care of the body.

Elimination of Body Waste

Not all the food eaten is consumed in the body. For example, the

amount of cell tissue. During sleep all the work of the body is slowed up. The heart does not beat so fast, the breathing is slower, etc. Therefore during sleep the body has a chance to repair worn out cell tissue, and in the case of children to make the new tissue demanded for growing. For these reasons children should have long hours of sleep. They should go to bed regularly each night, and have a regular hour for getting up in the morning. If this is adhered to, children go to sleep more readily, and sleep much better.

Getting Over Tired

If children are underweight they tire easily. Frequently they are nervous and irritable. Such children need additional time for relaxation and rest; they should have a rest period of 20 to 30 minutes each morning and afternoon. These rest periods bring better results if taken just before meals, because if their bodies are rested they can digest and



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Use Reefer's Rat Virus and every rat and mouse on your premises will be gone, or your money refunded. Don't tolerate rats any longer. Send us \$1.00 and we will send you enough Virus to clear your barn or house of rats. Results guaranteed. Send your order today. Get rid of rats here's your chance, act. **E. J. Reefer** 4814 Main St. Vestnor, N. J.

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PLEASE say: "I saw your adv. in Pennsylvania Farmer."

make better use of the food consumed.

Need Plenty of Fresh Air

Digestion consists of converting food into a form that can be absorbed by the blood stream and carried by it to all parts of the body, where the different tissues—muscles, bone, nerve and other tissues—take what they need and use it.

The process of the body in using food is really a burning process. There is no flame as when wood is burned, but heat is produced, which keeps the body warm. To thus burn food oxygen is needed. The fire in the stove will go out if there is not enough air to keep it alive.

Just so the body cannot use food unless there is a good supply of oxygen. And oxygen is taken into the body and the blood thru the lungs. Then it is carried by the blood all over the body.

The body cannot have as much oxygen as it needs unless we have plenty of fresh air in our homes and schoolrooms and places where we work. It is especially important that at night, when our bodies are repairing the worn out tissue, particularly in the case of children, that there be plenty of fresh air. This can be supplied only by having the windows open.

DOING THE SPRING PAPERING

The coming of spring brings up the question of papering. Everyone likes to have fresh paper for summer, free from the grime which is sure to darken the walls during the winter where there are many stoves in the house. Where stoves must be used it is hard to keep them from giving off dirt and smoke, and when the walls cannot be successfully cleaned, frequent papering seems to be the only way to keep the rooms bright.

In selecting the paper for each room the housewife should keep several things in mind. She should distinguish between the warm and the cold colors and should be guided by the shape and height of the room. No dark room should be made gloomy with greys or deep blues, and bright colors frequently seem out of place on the walls of very sunny rooms. The finish of the furniture and the color of the rugs or carpets should be taken into consideration in choosing the paper.

It takes time and patience for the inexperienced to do a good job of papering but the satisfaction to be derived from a neatly papered room is more than enough to pay for the extra trouble of doing the work right.

One needs a stout plank to walk on when papering the ceiling, two trustworthy stepladders to support the plank; a long wide pasting board, a rule and sharp knife for trimming the paper, a pasting brush, a wide brush like the one illustrated for smoothing the paper onto the wall, clean soft cloths for tamping down the edges, good flour paste, and good patience and strength for the work.

If it is desired to paper a room which has never been papered before and which has been whitewashed it will be necessary to neutralize the whitewash by washing it with a vinegar solution; the acid of the vinegar counteracting the alkali of the whitewash, and the washing removing the particles of loose whitewash. Then the walls should be sized with a thin glue solution or with paste containing some glue.

PENNSYLVANIA FARMER PATTERNS

Give figures and letters of each pattern exactly as printed at beginning of each description or we will not be responsible for correct fitting of orders. Give bust measure when ordering waist patterns, waist measure for skirt, and age for children's patterns. Address Pennsylvania Farmer, 261 S. Third Street, Philadelphia, Pa.

3548.—A Stylish Costume.—The skirt is cut in 7 sizes: 22, 24, 26, 28, 30, 32 and 34 inches waist measure. The waist in 6 sizes: 34, 36, 38, 40, 42 and 44 inches bust measure. The width of the skirt at the foot is about 1 1/2 yard. Figured net and crepe de chine are here combined. One could have satin and printed foulard, linen and embroidery or pongee and taffeta in combination. To make the dress of one material will require 6 1/2 yards of 27-inch material for medium size. This illustration calls for two separate patterns at 10 cents each.

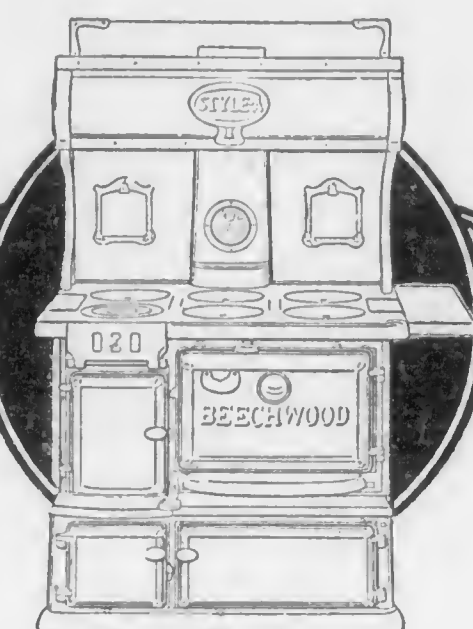


3538.—3543.—A Smart Gown.—The waist is cut in 7 sizes: 34, 36, 38, 40, 42, 44 and 46 inches bust measure. The skirt in 7 sizes: 24, 26, 28, 30, 32, 34 and 36 inches waist measure. To make this dress for a medium size will require 7 1/2 yards of 36-inch material. Crepe de chine or serge with flares or chenille embroidery or linen embroidered would be good for this model. The width of the skirt at the foot with plaits extended is 2 1/2 yards. This illustration calls for two separate patterns which will be mailed to any address on receipts of 10 cents each.



3499.—Pleasing Up-to-date Model.—The pattern is cut in 3 sizes: 16, 18 and 20 years. An 18-year size will require 3 1/2 yards of 44-inch material. Satin, tulle, serge, poplin, and all wash fabrics are attractive for this design. As illustrated embroidered and plain batiste are combined. The width of the skirt at the foot is about 1 1/2 yard. Pattern, 10 cents.

3527.—A Popular Style.—The pattern is cut in 7 sizes: 34, 36, 38, 40, 42, 44 and 46 inches bust measure. A 38-inch size requires 6 1/2 yards of 44-inch material. This is good for combinations of material and for foulard, linen, crepe, satin and taffeta. The gimples could be of crepe or crepe de chine and the dress of serge or satin. The width of the skirt with plaits extended is about 2 1/2 yards. Pattern, 10 cents.



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She knows too, that it has added much to the beauty of her kitchen. This beautiful enameled range will not chip, craze, or crack. Heat will not discolor it. And it cleans easily. All that is needed is a damp cloth. An oiled cloth cleans the polished top.

You have a choice of three colors—blue, brown and gray.

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—land similar to that which through many years has yielded from 20 to 45 bushels of wheat to the acre. Hundreds of farmers in Western Canada have raised crops in a single season worth more than the whole cost of their land. With such crops come prosperity, independence, good homes, and all the comforts and conveniences which make for happy living.

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The Voice of the Pack

by Edison Marshall

CHAPTER XVI

"OVERTAKING Cranston?" "Of course. And it sounds like a crazy dream. But listen, both of you. If we have got to die, up here in the snow—and it looks like we had—what is the thing you want done worst before we go?" Lennox's hands clasped, and he leaned forward on the sled. "Pay Cranston!" he said.

"Yes!" Dan's voice rang. "Cranston's never going to be paid unless we do it. There will be no signs of incendiarism at the house, and no proofs. They'll find our bodies in the snow, and we'll just be a mystery, with no one made to pay. The evidence in my pocket will be taken by Cranston, sometime this winter. If I don't make him pay, he never will pay. And that's one reason why I'm going to try to carry out this plan I've got."

"The second reason is that it's the one hope we have left. I take it that none of us are deceived on that point. And no man can die tamely—if he is a man—while there's a chance. I mean a young man, like me—not one who is old and tired. It sounds perfectly silly to talk about finding Cranston's winter quarters, and then, with my bare hands, conquering him, taking his foods and his blankets and his snowshoes and his rifle to fight away these wolves, and bringing 'em back here."

"You wouldn't be barehanded," the girl reminded him. "You could have the pistol."

He didn't even seem to hear her. "I've been thinking about it. It's a long, long chance—much worse than the chance we had of getting out by straight walking. I think we could have made it, if the wolves had kept off and the snowshoe hadn't broken. It would have nearly killed us, but I believe we could have got out. That's why I didn't try this other way first. A man with his bare hands hasn't much of a chance against another with a rifle, and I don't want you to be too hopeful. And of course, the hardest problem is finding his camp."

"But I do feel sure of one thing: that he is back to his old trapping line on the North Fork—somewhere south of here—and his camp is somewhere on the river. I think he would have gone there so that he could cut off any attempt I might make to get thru with those letters. My plan is to start back at an angle that will carry me between the North Fork and our old house. Somewhere in there I'll find his tracks, the tracks he made when he first came over to burn up the house. I suppose he was careful to mix 'em up after once he arrived there, but the first part of the way he likely walked straight toward the house from his camp. Somewhere, if I go that way, I'll cross his trail—within ten miles at least. Then I'll back-trail

him to his camp." "And never come back!" the girl cried.

"Maybe not. But at least everything that can be done will be done. Nothing will be left. No regrets. We will have made the last trial. I'm not going to waste any time, Snowbird. The sooner we get your fire built the better."

"Father and I are to stay here—?" "What else can you do?" He went back to his traces and drew the sled one hundred yards further. He didn't seem to see the gaunt wolf that backed off into the shadows as he approached. He refused to notice that the pack seemed to be growing bolder. Human hunters usually had guns that could blast and destroy from a distance; but even an animal intelligence could perceive that these three seemed to be without this means of inflicting death. A wolf is ever so much more intelligent than a crow—yet a crow shows little fear of unarmed man and is wholly unapproachable by a boy with a gun. The ugly truth was simply that in their increasing madness and excitement and hunger, they were becoming less and less fearful of these three strange humans with the sled.

It was not a good place for a camp. They worked a long time before they cleared a little patch of ground of its snow mantle. Dan cut a number of saplings—laboriously with his ax—and built a fire with the comparatively dry core of a dead tree. True, it was feeble and flickering, but as good as could be hoped for, considering the difficulties under which he worked. The dead logs under the snow were soaked with water from the rains and the thaws. The green wood that he cut smoked without blazing.

"No more time to be lost," Dan told Snowbird. "It lies in your hands to keep the fire burning. And don't leave the circle of the firelight without that pistol in your hand."

"You don't mean," she asked unbelieving, "that you are going to go out there to fight Cranston—unarmed?"

"Of course, Snowbird. You must keep the pistol."

"But it means death; that's all it means. What chance would you have against a man with a rifle? And as soon as you get away from this fire, the wolves will tear you to pieces."

"And what would you and your father do, if I took it? You can't get him into a tree. You can't build a big enough fire to frighten them. Please don't even talk about this matter, Snowbird. My mind's made up. I think the pack will stay here. They usually—God knows how—know who is helpless and who isn't. Maybe with the gun, you will be able to save your lives."

"What's the chance of that?"

"You might—with one cartridge—kill one of the devils; and the others—but you know how they devour their own dead. That might break their famine enough so that they'd

hold off until I can get back. That's the prize I'm playing for."

"And what if you don't get back?" He took her hand in one of his, and with the other he caressed, for a single moment, the lovely flesh of her throat. The love he had for her spoke from his eyes—such speech as no human vision could possibly mistake. Both of them were tingling and breathless with a great, sweet wonder.

"Never let those fangs tear that softness, while you live," he told her gently. "Never let that brave old man on the sled go to his death with the pack tearing at him. Cheat 'em, Snowbird! Beat 'em the last minute, if no other way remains! Show 'em who's boss, after all—of all this forest."

"You mean—?" Her eyes widened.

"I mean that you must only spend one of those three shells in fighting off the wolves. Save that till the moment you need it most. The other two must be saved—for something else."

She nodded, shuddering an instant at a menacing shadow that moved within sixty feet of the fire. The firelight half-blinded them, dim as it was, and they couldn't see into the darkness as well as they had before. Except for strange, blue-yellow lights, close together and two and two about the fire, they might have thought that the pack was gone.

"Then good-by, Dan!" she told him. And she stretched up her arms. "The thing I said—that day on the hillside—doesn't hold any more."

His own arms encircled her, but he made no effort to claim her lips. Lennox watched them quietly; in this moment of crisis not even pretending to look away. Dan shook his head to her entreating eyes. "It isn't just a kiss, darling," he told her soberly. "It goes deeper than that. It's a symbol. It was your word, too, and mine; and words can't be broken, things being as they are. Can't I make your understand?"

She nodded. His eyes burned. Perhaps she didn't understand, as far as actual functioning of the brain was concerned. But she reached up to him, as women—knowing life in the concrete rather than the abstract—have always reached up to men; and she dimly caught the gleam of some eternal principle and right behind his words. This strong man of the mountains had given his word, had been witness to her own promise to him and to herself, and a law that goes down to the roots of life prevented him from claiming the kiss.

Many times, since the world was new, comfort—happiness—life itself have been contingent on the breaking of a law. Yet in spite of what seemed common sense, even though no punishment would forthcome if it were broken, the law has been kept. It was this way now. It wouldn't have been just a kiss such as boys and girls have always had in the moonlight. It meant the symbolic renunciation of the debt that Dan owed Cranston—a debt that in his mind might possibly go unpaid, but which no weight of circumstance could make him renounce.

His longing for her lips pulled at the roots of him. But by the laws of his being he couldn't claim them until the debt incurred on the hillside, months ago, had been paid; to take them now meant to dull the fine edge of his resolve to carry the tissue thru to the end, to dim the star that led him, to weaken him, by bending now, for the test to come. He didn't

know why. It had its font in the deep wells of the spirit. Common sense can't reveal how the holy man keeps strong the spirit by denying the flesh. It goes too deep for that, Dan kept to his consecration.

He did, however, kiss her hands, and he kissed the tears out of her eyes. Then he turned into the darkness and broke thru the ring of the wolves.

CHAPTER XVII

Dan Failing was never more thankful for his unerring sense of direction. He struck off at a forty-five-degree angle between their late course and a direct road to the river, and he kept it as if by a surveyor's line. All the old devices of the wilderness—the ridge on ridge that looked just alike, inclines that to the casual eye looked like downward slopes, streams that vanished beneath the snow, and the snow-mist blowing across the face of the landmarks—could not avail against him.

A half dozen of the wolves followed him at first. But perhaps their fierce eyes marked his long stride and his powerful body, and decided that their better chance was with the helpless man and the girl beside the flickering fire. They turned back, one by one. Dan kept straight on and in two hours crossed Cranston's trail.

It was perfectly plain in the moonlit snow. He began to back-track. He headed down a long slope and in an hour more struck the North Fork. He didn't doubt but that he would find Cranston in his camp, if he found the camp at all. The man had certainly returned to it immediately after setting fire to the buildings, if for no other reason than for food; and Cranston would certainly know this fact.

Dan didn't know when a rifle bullet from some camp in the thickets would put an abrupt end to his advance. The brush grew high by the river, the elevation was considerably lower, and there might be one hundred camps out of the sight of the casual wayfarer. If Cranston should see him, musing among the moonlit snow, it would give him the most savage joy to open fire upon him with his rifle.

Dan's advance became more cautious. He was in a notable trapping region, and he might encounter Cranston's camp at any moment. His keen eyes searched the thickets, and particularly they watched the sky line for a faint glare that might mean a camp fire. He tried to walk silently. It wasn't an easy thing to do with awkward snowshoes; but the river drowned the little noise that he made. He tried to take advantage of the shelter of the thickets and the trees. Then, at the base of a little ridge, he came to a sudden halt.

He had estimated just right. Not two hundred yards distant, a camp fire flickered and glowed in the shelter of a great log. He saw it, by the most astounding good fortune, thru a little rift in the trees. Ten feet on either side, and it was obscured.

He lost no time. He did not know when the wolves about Snowbird's camp would lose the last of their cowardice. Yet he knew he must keep a tight grip on his self-control and not let the necessity of haste cost him his victory. He crept forward, step by step, placing his snowshoes with consummate care. When he was one hundred yards distant he

saw that Cranston's camp was situated beside a little stream that flowed into the river and that—like the mountaineer he was—he had built a large lean-to reinforced with snowbanks. The fire burned at its opening. Cranston was not in sight; either he was absent from camp or asleep in his lean-to. The latter seemed the more likely.

Dan made a wide detour, coming in about thirty yards behind the construction. Still he moved with incredible caution. Never in his life had he possessed a greater mastery over his own nerves. His heart leaped somewhat fast in his breast; but this was the only wasted motion. It isn't easy to advance thru such thickets without ever a misstep, without the rustle of a branch or the crack of a twig. Certain of the wild creatures find it easy; but men have forgotten how in 100 many centuries of cities and farms. It is hardly a human quality; and a spectator would have found a rather ghastly fascination in watching the lithe motions, the passionless face, the hands that didn't shake at all. But there were no spectators—unless the little band of wolves, stragglers from the pack that had gathered on the hills behind—watched with lighted eyes.

Dan went down at full length upon the snow and softly removed his snowshoes. They would be only an impediment in the close work that was sure to follow. He slid along the snow crust, clear to the mouth of the lean-to.

The moonlight poured thru and showed the interior with rather remarkable plainness. Cranston was sprawled, half-sitting, half-lying on a tree-bough pallet near the rear wall. There was not the slightest doubt of the man's wakefulness. Dan heard him stir, and once—as if at the memory of his deed of the day before—he cursed in a savage whisper. Altho he was facing the opening of the lean-to, he was wholly unaware of Dan's presence. The latter had thrust his head at the side of the opening, and it was in shadow. Cranston seemed to be watching the great, white snow fields that lay in front, and for a moment Dan was at loss to explain this seeming vigil. Then he understood. The white field before him was part of the long ridge that the three of them would pass on their way to the valleys. Cranston had evidently anticipated that the girl and the man would attempt to march out—even if he hadn't guessed they would try to take the helpless Lennox with them—and he wished to be prepared for emergencies. There might be sport to have with Dan, unarmed as he was. And his eyes were full of strange conjectures in regard to Snowbird. Both would be exhausted now and helpless—

Dan's eyes encompassed the room; the piles of provisions heaped against the wall, the snowshoes beside the pallet, but most of all he wished to locate Cranston's rifle. He couldn't find it at first. Then he saw the glitter of its barrel in the moonlight—leaning against a grub-box possibly six feet from Cranston and ten from himself.

His heart leaped. The best he had hoped for—for the sake of Snowbird, not himself—was that he would be nearer to the gun than Cranston and would be able to seize it first. But conditions could be greatly worse than they were. If Cranston had actually had the weapon in his hands, the odds of battle would have been frightfully against Dan. It takes a certain length of time to seize, swing

and aim a rifle; and Dan felt that while he would be unable to reach it himself, Cranston could not procure it either, without giving Dan an opportunity to leap upon him. In all his dreams thru the months of preparation, he had pictured it thus. It was the test at last.

The gun might be loaded, and still—in these days of safety devices—unready to fire; and the loss of a fraction of a second might enable Cranston to reach his knife. Thus Dan felt justified in ignoring the gun altogether and trusting—as he had most desired—to a battle of hands. And he wanted both hands free when he made his attack.

If Dan had been erect upon his feet, his course would have been an immediate leap on the shoulders of his adversary, running the risk of Cranston reaching his hunting knife in time. But the second that he would require to get to his feet would entirely offset this advantage. Cranston could spring up too. So he did the next most disarming thing. He sprang up and strode into the lean-to.

"Good evening, Cranston," he said pleasantly.

Cranston was also upon his feet the same instant. His instincts were entirely true. He knew if he leaped for his rifle, Dan would be upon his back in an instant, and he would have no chance to use it. His training, also, had been that of the hills, and his reflexes flung him erect upon his feet at the same instant that he saw the leap of his enemy's shadow. They brought up face to face. The rifle was now out of the running, as they were at about equal distances from it, and neither would have time to swing or aim it.

Dan's sudden appearance had been so utterly unlooked-for, that for a moment Cranston could find no answer. His eyes moved to the rifle, then to his belt where hung his hunting knife, that still lay on the pallet. "Good evening, Failing," he replied, trying his hardest to fall into that strange spirit of nonchalance with which brave men have so often met their adversaries, and which Dan had now. "I'm surprised to see you here. What do you want?"

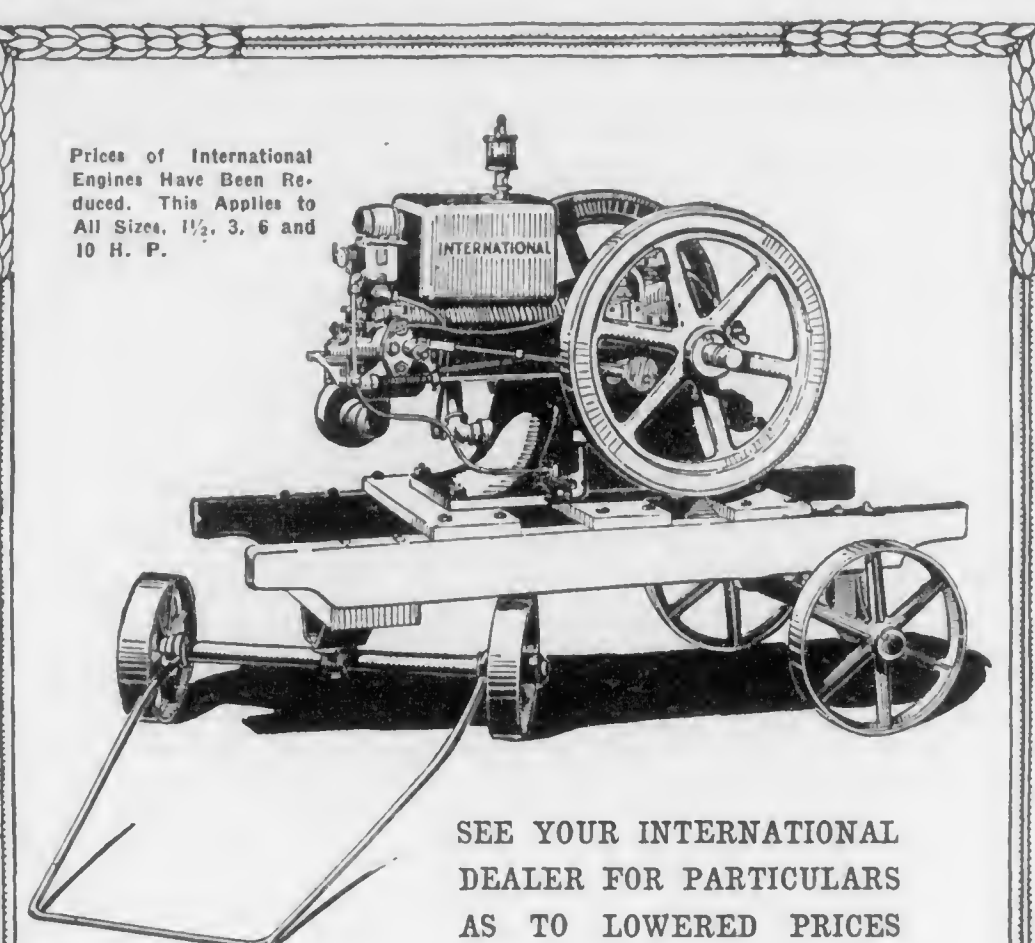
Dan's voice when he replied was no more warm than the snow banks that reinforced the lean-to. "I want your rifle—also your snowshoes and your supplies of food. And I think I'll take your blankets, too."

"And I suppose you mean to fight for them?" Cranston asked. His lips drew up in a smile, but there was no smile in the tone of his words.

"You're right," Dan told him, and he stepped nearer. "Not only for that, Cranston. We're face to face at last—hands to hands. I've got a knife in my pocket, but I'm not even going to bring it out. It's hands to hands—you and I—until everything's square between us."

"Perhaps you've forgotten that day on the ridge?" Cranston asked. "You haven't any woman to save you this time."

"I remember the day, and that's part of the debt. The thing you did yesterday is part of it too. It's all to be settled at last, Cranston, and I don't believe I could spare you if you went to your knees before me. You've got a clearing out by the fire—big as a prize ring. We'll go out there—side by side. And hands to hands we'll settle all these debts we have between us—with no rules of fighting and no mercy in the end!" (Concluded Next Week).



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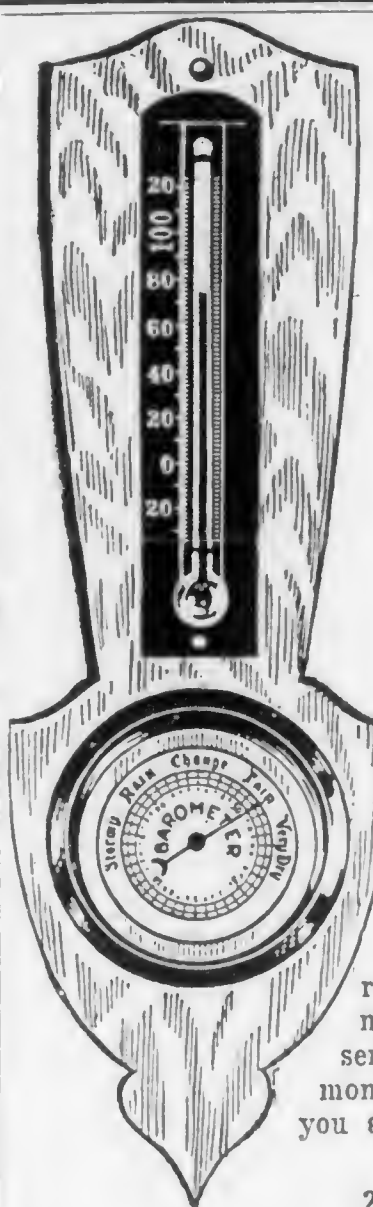
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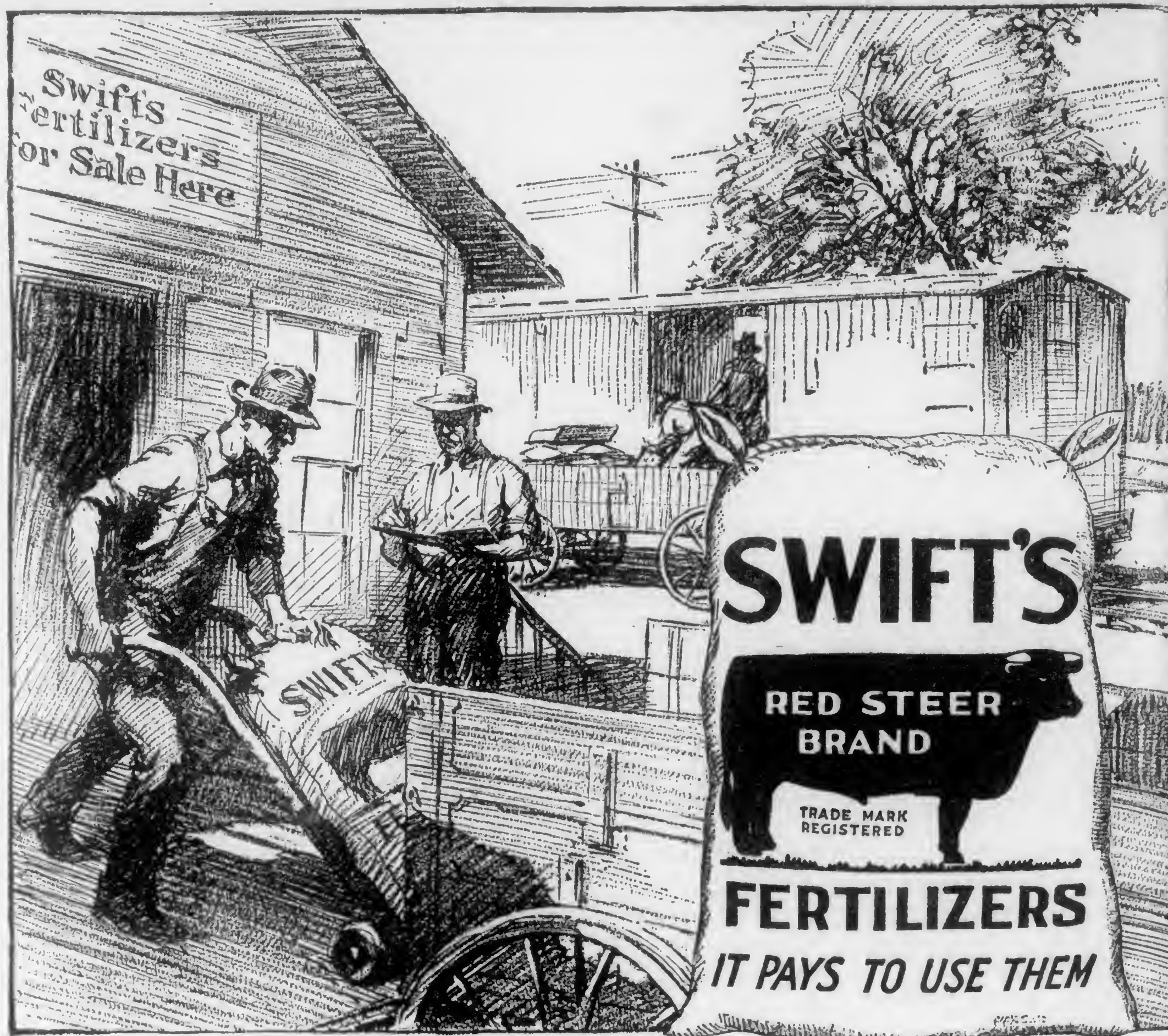
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P. N. FOLIORELLA
MANAGER
APR 10 1921



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Seed Potatoes— Good and Bad

A Comparison Showing the Value of Planting Good Seed

By F. E. GAYLORD

ONE HUNDRED-FIFTEEN bushels per acre from certified seed potatoes as compared with 53 bushels from potatoes sold for "seed" was the verdict rendered at digging time in the court of experience last year on Blaine Miller's Farm near LaFayette, Indiana.

Miller tried both kinds of seed, having bought 50 bushels of real potato seed—potatoes which had been grown and selected especially for seed potatoes and he likewise bought, at a nearby town, about 50 bushels of potatoes sold for seed. Both lots of potatoes were planted in the same field; both were given the same careful attention and harvested at the same date. The good seed came up and produced a fine stand of vigorous healthy plants while the store potatoes came up unevenly and could be easily picked out thruout the summer. At digging time the potatoes from selected seed produced 115 bushels of clean, smooth, marketable potatoes while the other ran only 53 bushels per acre and part of these had to be discarded as they were too small to sell.

Nor is this the only case tried last year. Another noticeable one was on the farm of F. A. Bond in Porter County. Bond, and Pierce, his neighbor, decided to put out 10 acres of potatoes. While they had enough of their own seed to plant the field, they decided to buy some selected seed and try it out just to see which gave the best results. Mr. Pierce was a little skeptical about trying out other seed than his own but Bond went ahead and purchased it. Their own potatoes had been "green sprouted" so they came up before the other potatoes which arrived too late to give them time to "green" any. It wasn't long until the potatoes from selected seed showed their superiority. With twelve weeks of hot dry weather the potato plants had a very hard time. At cutting it had been noticed that their own seed potatoes contained several which indicated wilt but these were planted just the same. As the dry weather came on the plants in this side of the field began to yellow, wilt and die and be-



Poor Seed Means a Diseased Crop and an
Uneven Stand

100 bushels to the acre without a cull, and sold for \$2 per bushel while the others ran 60 bushels, 10 of which had to be discarded because they were too small and had so much wilt infection in them as to make them unfit even for eating purposes. Many farmers near Bond's place early in the season were skeptical about their being any great difference in "seed potatoes" and allowed that

he had better plant his own. During the summer the county agent, Mr. Sink, and Bond invited them in to see the field. None went away who were not convinced of the success of using "good seed stock." While farmers generally had a potato failure, Bond and Pierce wore a broad smile as they sold the potatoes at digging time for \$2 a bushel and couldn't supply the demand.

The usual run of potato seed brought into town is not seed potatoes but potatoes sold for seed. Its past is shaded in the clouds of obscurity. Ask the dealer where it came from or under what conditions it grew, whether or not it has been taken from especially selected seed fields and if it is true to variety. If he cannot give you a clean bill of health for the potatoes you had better get some seed that has passed the board of censorship.

Potatoes which have been carefully grown for seed with attention being paid to freedom from disease, trueness to type and high producing qualities are always marked as such, while ordinary stock sold as potato seed is bought with no more knowledge of its past or assurance of its future than that it is "potato seed."

Many farmers and potato growers are planting seed from selected stocks and saving their own seed from this. Others are picking at digging time the best hills for seed another year.

While the tops are still green yet as late in the fall as possible is the time to select seed for another year. At this time go thru the field selecting the hills of one or two stalks which are vigorous and healthy. Dig these by hand and save the hills which produce a large number of smooth, uniform, marketable tubers. Do not select any hills for seed in which the vines are small or weak, or which at digging time are found to have borne either a few large potatoes or a large number of small, ill-shaped ones. By following this method of selecting the seed stock farmers can easily build up a strain of potatoes superior to those that can be bought at the store.

Building Up a Retail Trade

If the farmer produces a product of good quality and markets it in a business-like way he has much less to fear in time of vacillating markets, than the one who depends on the stock buyer and the middleman.

The recent slump in prices found us with a number of hogs on hand. The loss would have been great, as prices offered were about 8 cents a pound when we were ready to dispose of the animals. At this figure they would have brought about \$20 each. The hogs were butchered on the farm, made into high-class sausage; cuts such as tenderloin, back bones and spare ribs were sold separately. Only the choicest meat was used, and after paying expenses of selling, the hogs brought about \$35 each. There was some lard left, and a small amount of side pork from which the lean had been cut and used with the sausage. Orders were taken at hotels, high-class restaurants, and from the homes of the well-to-do people of a nearby city. The meat was delivered soon after butchering, and could be guaranteed fresh. After the first trip, repeat orders came easily, and satisfied customers told their friends, and in this way the demand for the products was even better than anticipated.

Had we charged structural iron worker's wages, there would have been no cash left to be

credited to the pork production end of the business, but as it worked out the marketing was the most profitable end of the game.

The second time over the city we found there was a demand for special parts of the carcass. One lady was particularly anxious to secure the heart, lungs and liver. The tenderloin, which cannot usually be secured as such from the butcher-brought a particularly good figure. We took precaution to have all meat neatly packed, the sausage in cloth sacks, and the other cuts in nice clean paper neatly tied. This paid, and did as much as the assurance of good quality meat.

It will pay the farmer when dealing directly with city trade to supply only the best he can give. He should have his packages neat, his goods should be clean, and if they do not suit, refund without question. The city people may be critical in their wants, but they are willing to pay for what they get.

The farmer cannot wrap his product in a newspaper, and hand it out to the customer expecting to command the respect and future business of that individual. He must show that he is a business man worthy of consideration, otherwise, there will even be more numerous steps in process of marketing, which will be thrust in between the farmer and the consumer. Grading,

packing, and advertising must be done by some one. If the farmer does not do it he pays for it, and pays heavily.

The farmer dealing with city customers cannot afford to be grouchy or tactless. We have dealt with a high-class trade in poultry for more than a dozen years. It has paid to hold our tongues when "turn downs" come.

We had one customer who asked for shipment of a dressed turkey once in two weeks during the winter months. The second turkey shipped was returned at our expense. However, later, we learned the turkey came at a time when family had been called away, and maids not having had instructions, returned the fowl.

If the farmer is liberal in his weights, not exacting about the last penny in change, and is thoughtful in the way of a bunch of flowers or some little token from the country, the well-to-do city customer is the most desirable person with whom he can do business. When the city customer has confidence in the farmer and his product, then the farmer can explain to a willing hearer just what his problems are. In this way the farmer and the city man can get together to the advantage of both, whereas now the city and country are pulling apart more and more each year.—W. J.

The Value of Crop Rotations

By Dr. J. G. LIPMAN
Director New Jersey Experiment Station

DWELLERS in newly developed agricultural regions often specialize in the growing of a single crop. This is true, for instance, of cotton, tobacco, potatoes, corn, wheat, flax, etc. The same crop is grown year after year on the same land until it ceases to be profitable. Sooner or later the farmers realize that, by establishing a crop rotation, better results and profits may be had. The reasons why rotations of crops are, in the long run, more satisfactory than single cropping are mainly the following:

1—Crop rotations permit of the more efficient use of farm labor. The different crops of the rotation do not mature at the same time. Hence, farm labor can be better distributed. The marketing of the crops is also somewhat simplified and the risks due to fluctuating prices not so great.

2—Because of differences in the amount and distribution of rainfall and the range of spring and summer temperatures, a succession of crops is more likely to protect the farmer against untoward climatic conditions than would any system of single cropping. For instance, in a rotation including wheat and corn there might be favorable temperature and rainfall for a good yield of wheat, but not for a good yield of corn. In other seasons the reverse may be true.

3—Where the same crop is grown continuously or frequently on the same land, plant diseases and insects peculiar to the particular crop become more and more troublesome. In some cases it is necessary to have very long rotations in order to escape the ravages of certain plant diseases. Potato scab, clover sickness, flax wilt, and similar diseases, are examples of this sort.

4—Crop rotations are of advantage as compared with single cropping because they permit of better provision for the maintenance of soil fertility.

From the standpoint of soil fertility the subject of crop rotations is an important one. It is widely recognized that cultivated land loses large quantities of organic matter or humus. Where clean cultivation is practiced year after year, it is next to impossible to maintain a sufficient supply of humus in the soil even though large quantities of barnyard manure may be used. On the other hand, where land is seeded down to grass and kept in sod for two or more years the accumulation of humus-making materials in the soil far exceeds the loss. Hence, the keeping of land in sod for any considerable length of time allows the restoration of the humus that was lost on account of the growing of cultivated crops. Land of fair fertility will contain 0.1 to 0.15 per cent of nitrogen. This would correspond, roughly, to 2 to 3 per cent of fresh and partly decayed vegetable matter. Assuming that an acre of land to a depth of 6½ inches will weigh about 2 million pounds, a fair soil should contain 20 to 30 tons of organic matter per acre to the depth just mentioned. Where clean cultivation is practiced humus may be lost at the rate of one ton per acre or more during each growing season.

Crop rotations are as important from the standpoint of maintaining the supply of soil nitrogen as they are for maintaining a suitable supply of organic matter. Where crop yields are up to the average, or a little better than the average, the annual loss of nitrogen from the land may amount to 50 to 100 pounds per acre. This loss must be made good either by the use of manure or commercial fertilizer or by the use of such crops in the rotation as will gather nitrogen from the air and increase thereby the nitrogen content of the soil. Crops like clover, alfalfa, sweet clover, cow-peas, soybeans, etc., when regularly included in the rotation, help to offset the loss of soil nitrogen due to the removal of this constituent by the crop or, thru the formation of soluble nitrates in the soil, that are subject to washing out by the fall and winter rains. A good crop of clover may be able to accumulate from the air in one growing season 75 to 150 pounds of nitrogen. Even when the clover is har-

vested and made into hay a large part of the nitrogen remains in the soil in the form of roots and stubble. Where the rotations are long and the number of legume crops in the rotations limited, the restoring of the nitrogen to the soil may not keep pace with the loss of it. In the common five-year rotation consisting of corn, oats, wheat, timothy and clover the nitrogen is not replenished sufficiently fast to permit the satisfactory maintenance of a sufficient supply of nitrogen in the soil. The situation becomes even worse when the clover begins to fall—some times on account of lack of lime in the soil; at other times on account of various fungous diseases to which clover is subject. For this reason, efforts are made to modify the rotation by growing soybeans instead of oats, and by using alsike instead of red clover. Occasionally, growers attempt to improve on this rotation still further by sowing a leguminous crop in the corn. In the southern states, for instance, it is not uncommon to plant cowpeas or soybeans in the corn, and to plow under the resulting crop in the following spring. Farther north winter vetch and crimson clover, alsike and alfalfa are also used for this purpose. Where the rotations are short the replenishing of the supply of soil nitrogen becomes easier. For instance, in rotations consisting of corn, oats and clover it is fairly easy to maintain a good supply of nitrogen in the land as long as the clover can be made to grow without difficulty. Rotations consisting of corn, oats and alfalfa for two or three years also permit the maintaining

toxins has been greatly exaggerated, it is nevertheless true that, in the case of some crops at least, residues are left in the soil which are more or less inimical to the best development of succeeding crops of the same species.

In order to obtain the very best returns from crops grown in more or less definite rotations, provision should be made for favoring the legumes so far as possible. Good crops of corn are usually harvested after clover, but, where the clover crop is a poor one, the following corn crop is likely to be unsatisfactory. By using lime we encourage the growth of the clover. The same is also true of phosphoric acid and potash. For instance, we can stimulate the growth of the clover not only for its own sake, but for the sake of the benefit which it may have on the succeeding crops. The larger the yield of clover, the greater the amount of nitrogen left in the roots and stubble. Hence, the greater amount of nitrogen which will later be changed into nitrates to be used by the following crop of corn, oats, wheat, barley, etc.

The returns from crop rotations may be further increased by selecting such strains of corn, wheat, oats, clover, etc., as would be resistant to disease and will, in general, thrive best under the given conditions of soil and climate. It may be added, further, that there seems to be some relation between the type of the crop grown on the land and the numbers and kinds of bacteria active in the soil. Such evidence as is now available would seem to indicate that crop rotations are more suitable than single cropping for establishing an active, vigorous combination of bacteria in the soil. In view of the important part that soil bacteria play in making available plant-food in the soil, the practice of rotating crops is made desirable also for this reason.

DELAWARE FARM BUREAU FEDERATION ORGANIZED

With a membership of 2200 Delaware farmers, the organization of the Delaware State Farm Bureau Federation was completed at the first annual meeting held in the Century Club rooms, in Dover, Tuesday, March 22. By the unanimous selection of the nominating committee, and a standing vote by acclamation of the delegates, W. V. Cosden of Dover, was elected president. In presenting Mr. Cosden's name, Thos. N. Rawlins, of Seaford, chairman of the nominating committee, said that his committee felt it would be the unanimous wish of the members of the Federation to confer this honor upon the man who had so successfully planned the membership campaign and given so unreservedly of his time to bring about its present success and strength.

John Ponder, of Milton, a former president of the Sussex County Farm Bureau, was made vice-president, and Frank F. Yearsley, of Marlinton, president of the New Castle County Farm Bureau, was chosen as treasurer of the State Federation. The office of secretary is appointive and carries with it much of the executive work of the State office. This position is to be filled by the Executive Committee, which will consist of the elected officers and two additional members elected from each county farm bureau.—The Delawarean.

ANOTHER BIG TREE

I have been reading some articles in the Pennsylvania Farmer relating to big trees in Pennsylvania. One gentleman tells of one 22 feet in circumference, 18 inches from the ground, with a seventy-foot spread of branches.

We have some big trees in Jersey also. I have one, a white oak, in my yard, measuring 30 feet in circumference, 18 inches from the ground, and has 105 ft. spread of branches and there are many limbs that will measure two feet in diameter. This tree is on my farm in Salem Co., New Jersey.—Lemuel Denelsbeck.



The Pet of The Farm



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Helps on Machinery Problems

THE erratic operation of an internal combustion engine such as is used on practically all farm light and power plants, is more often due to dirty and defective spark plugs than to any other cause. Yet a spark plug is a very simple device, merely a heavy wire projecting thru a metal skirt from which it is insulated by porcelain, mica, or some other kind of insulating material with the end of the wire which is inside the engine cylinder placed close to a projection from the metal skirt, leaving a very narrow space across which the spark which is to ignite the fuel charge is expected to jump.

The job which the spark plug is called upon to do does not at first glance look like a very hard one. It is not at all difficult to insulate a heavy piece of wire from a metal skirt or base so that even the "high tension" spark cannot get thru the insulation, and so that in case a high voltage current of electricity is sent thru the wire, it will jump across the small space to the projection on the skirt, and in so doing, ignite the fuel charge.

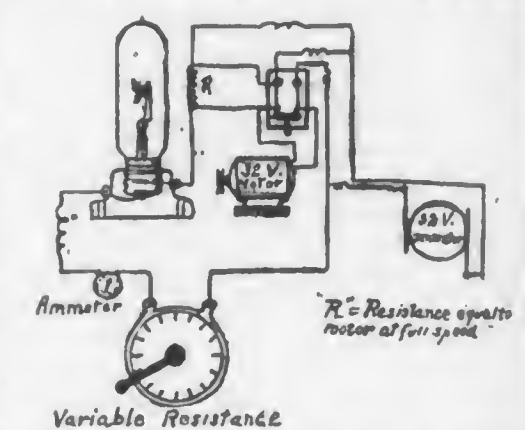
But there are several things which make it hard for the spark plug to perform satisfactorily at all times. First, and worst, there is often a great deal of soot, or lamp black, formed in the combustion chamber which is deposited on the porcelain or other insulating material on the inside end of the spark plug. This soot is practically pure carbon, and carbon, as everyone knows, it quite a good conductor of electricity. If this coating of soot, therefore, covers the porcelain from the skirt of the plug to the central wire or electrode, the high voltage current of electricity which is supposed to jump the spark gap and ignite the fuel, will naturally take the path of least resistance and pass thru the thin layer of carbon, since electricity does not like to jump gaps in its circuit if it can be avoided and will always complete its trip by the easiest route. Air is a much poorer conductor of electricity than carbon—electricity would rather pass thru an inch or more of a carbon coating than across an air gap of only one-fiftieth of an inch.

It is scarcely necessary to point out the fact that if the electricity can travel from the central wire or electrode to the skirt, by passing thru the carbon coating on the insulator, there will be no spark at the spark gap and there will be a misfire in the cylinder. Sometimes there is not enough carbon for all the electric current to pass thru so the current divides and part of it goes thru the carbon coating while the other jumps the spark gap. This makes a "weak" spark, one which is not so hot as would be the case should the entire current cross the air gap. A weak spark may cause a misfire, or it may ignite the charge but do such a poor job that the fuel burns comparatively slowly, so that the full power of the fuel is not obtained.

From the above it will be seen how important it is to have the inside end of the insulator kept free from carbon, since the presence of carbon on the insulator interferes seriously with the proper operation of the motor.

Master—Can a leopard change his spots? Freddie—Yes, sir. "Now that's wrong. You know a leopard cannot change his spots." "Oh, but he can, sir, really." "Well, tell me how, then." "When he's tired of sitting on one spot he can change to another."

ings were all tightened up. I always kept plenty of heavy oil in the crank case. The plant is located in an outhouse on my farm. It runs fine after it warms up." From your meager description of the ailment I would say the heavy oil was the trouble. The cold, unheated outhouse causes the oil to thicken. When you start the engine it is like pulling the connecting rod and crank shaft thru solid grease. Lighter oil in cold weather or heating your power house would probably overcome this. Try it and if it does not improve write me in detail.



Correct Way to Connect a Motion Picture Machine and a Small Electric Power Plant

power above that actually required is not a bad feature. The variable resistance shown in the sketch must be of sufficient resistance to absorb the entire output of the generator. The motion picture lamps now used are of the high efficiency type which means that for the best work they must have a fixed current with practically no voltage variation. It is therefore wise to have an ammeter in the line as shown on the sketch. There is no switch used between the source of electric current and the lamp, the resistance is used entirely for this purpose.

"When a motor is required to operate a film a resistance equal to that of the motor at full speed must be inserted in the line as shown in the sketch. When the motor switch is thrown into the "on" position this resistance is automatically cut out but when the motor is shut-off, the resistance automatically cuts in keeping the resistance of the total circuit a constant quantity.

"In other words, the circuit is designed to maintain a fixed load at all times on the engine no matter whether the lamp is being turned off or on or whether the motor is used or not. The only care required is at the time of starting the generator at which time the variable resistance must absorb the full output."

Master—Can a leopard change his spots? Freddie—Yes, sir. "Now that's wrong. You know a leopard cannot change his spots." "Oh, but he can, sir, really." "Well, tell me how, then." "When he's tired of sitting on one spot he can change to another."

FERTILIZING THE APPLE ORCHARD

(Continued from Page Six).

the application well out beyond the spread of the branches, or it may be put on with a drill over the entire area. The former method is probably preferable with young trees, while there is little if any difference in the results of the two methods in mature trees.

As to time of application, we have no really definite data as to what is the very best time to make the applications. The common advice at present is to make them some time prior to blooming and probably preferably about as soon as the buds start into growth, if it is desired to get the maximum effect on the crop of the current season. For the crop of the following season, however, and for the maximum effect of the fertilization applied, we have no positive advice to give so far as the most effective time of application is concerned. We do know, however, that we have been able to secure very profound effects on the crop of the following season with initial applications made as late as the eighth of July, and we have even made them as late the first of August with very favorable results.

In view of these facts, we believe that the best practice now available is to make the applications of quickly available nitrogen ahead of the bloom in the year in which a light crop is expected, and after the bloom in the full crop years. Such a course offers opportunity to vary the applications somewhat in proportion to the amount of fruit set on the trees in the full crop years, and it should also exert the maximum effect in evening up the crops of the off years.

CONTROLLING ROOT MAGGOT

How an initial outlay of but forty dollars can make a net gain of from \$600 to \$900 per acre in the production of early cabbage is revealed in the results of experiments with root maggot control on that crop by the tar disk method, conducted last season in Dauphin and Washington Counties. H. E. Hodgkiss, extension plant insect specialist at the Pennsylvania State College, co-operating with cabbage growers and the farm agents in these counties, has but recently announced the startling results in increased yield.

The experiment was conducted on two Dauphin and one Washington County farm. Small, round pieces of ordinary tar paper were fitted about the stalks of early cabbage plants at a cost of from \$40.80 to \$42.60 per acre. On one Dauphin plant the acre yield of untreated cabbage was 2486 mature heads, against 10,057 for those treated with tar disks. This was an increase of 7571 heads or a net gain of \$716.30 at market prices. On the other Dauphin plot the untreated yield was only 624 mature heads, and that with the protection afforded 10,343 heads, with a net gain of \$931. The Washington county experiment gave 2496 mature heads untreated, and 9604 heads for the treated, or a net gain of \$668.20 per acre.

These figures, according to the college specialist, show conclusively that it pays to go to the extra expense of placing protecting tar disks on early cabbage to prevent destruction by the root maggot.

If you have a grouch, hold it 'till after the next meal. Feeding cures it.

Farm Hauling Enters a New Era

TODAY progressive farmers are placing old farming methods on trial. Value must be proved or the old must go. In these times of high costs the wastes of past years must fall by the wayside.

In the search for economies, the always-important work of farm hauling is being rigorously revised. On many farms, International Motor Truck haulage has already ushered in a new era of energetic movement—of time- and work-saving efficiency.

By this transportation short-cut, stock is marketed in less time and with less shrinkage—crops are hauled when prices

are right—supplies are delivered promptly when needed—hard-hauling jobs are made easy and long trips short.

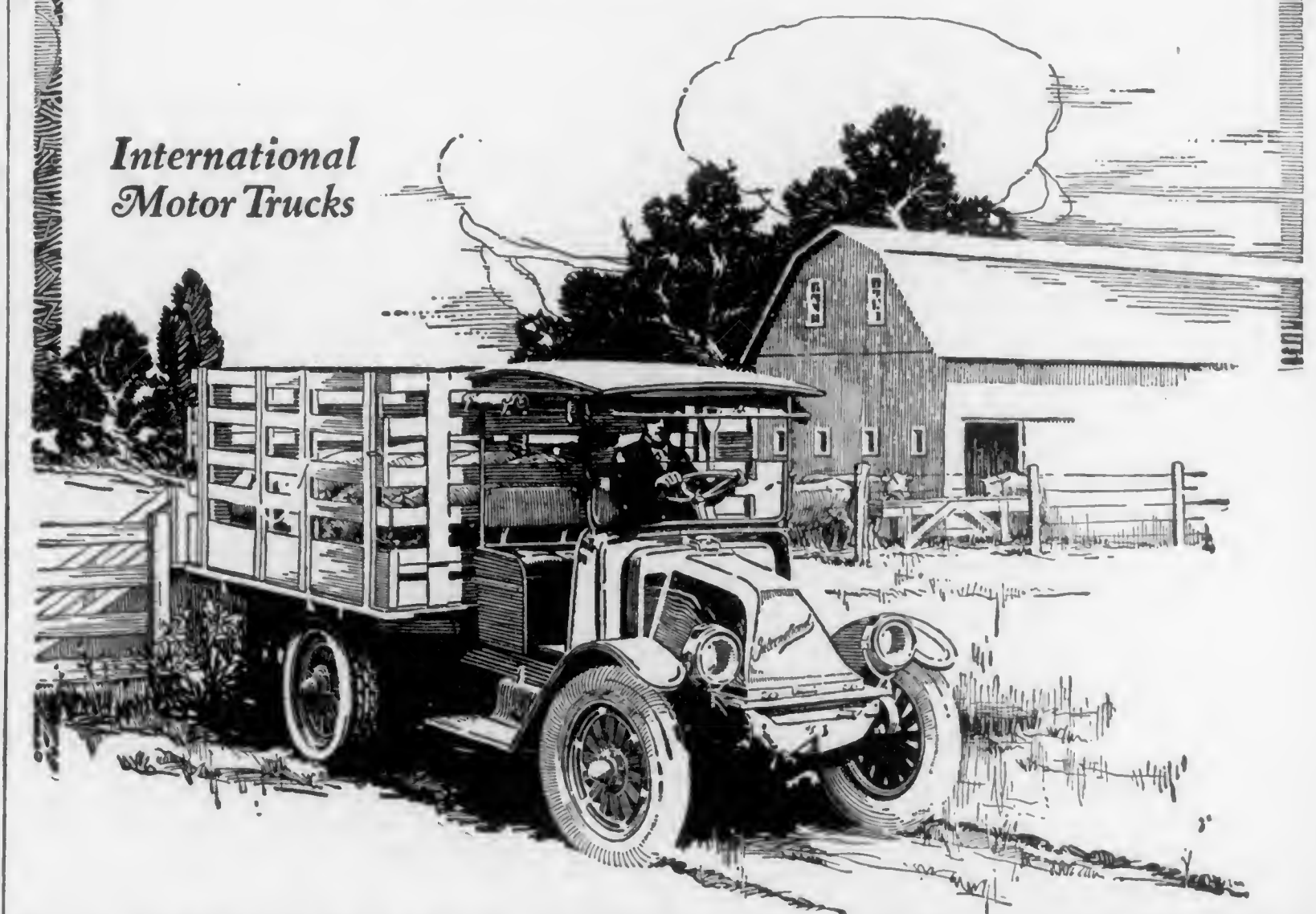
The fact that International Motor Trucks are the product of a concern that has a broad-as-agriculture reputation for fair dealing, good value, and the production of dependable labor-saving farm equipment, should be ample assurance that these trucks will in all cases provide low-cost hauling service.

The sizes range from 3/4-ton to 3 1/2-tons capacities and there is a style of body for every hauling requirement.

INTERNATIONAL HARVESTER COMPANY

CHICAGO OF AMERICA (INCORPORATED) USA
92 BRANCH HOUSES IN THE UNITED STATES

International Motor Trucks



PAINT \$1.25 PER Gallon
ORDER DIRECT FROM FACTORY
We will send you as many gallons as you want of good quality red or brown
BARN PAINT
upon receipt of remittance. We are paint specialists and can supply you with paint for any purpose. Tell us your wants and let us quote you low prices. We can save you money by shipping direct from our factory. Satisfaction guaranteed. On orders for 30 gallons or over we will prepay the freight within a radius of three hundred miles.
AMALGAMATED PAINT CO.
Factory: 373 WAYNE ST., Jersey City, N. J.

Seed Potatoes

Early Irish Cobbler. Grown on new ground, thoroughly treated and sprayed. Nice clean seed. Price \$2.00 per 100 lbs. in sacks.
E. C. SNOVER, Covington, Pa.

MANURE
HIGH-GRADE NEW YORK STABLE MANURE. Carefully selected and screened. Delivered to New York, Pennsylvania and Reading Railroad.
Acme Stable Manure Co.
PHILADELPHIA OFFICE, 1918 MARKET STREET

BINDER TWINE
Get our low price in quantities to Granges and Farmers' Associations. Agents wanted. Samples free. Metro, Ohio.
THEO. BURT & SONS.

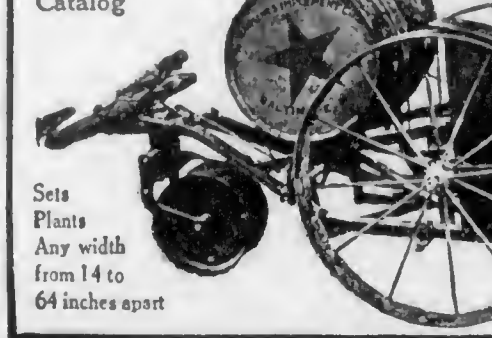
H u b a m

This new Annual White Sweet Clover has been acclaimed by authorities as the greatest of all annual legumes. Grows 5 to 8 feet same season sown.
The Supply Is Very Short
and now is your chance to get in on the ground floor. 1 to 1 1/2 pounds only required per acre for seed production.
We have a limited amount to offer, cleaned, certified and guaranteed by the Michigan Crop Improvement Ass'n. To be released only for demonstration purposes in lots of 1 pound or less.
\$7 per pound, \$4 per 1/2, \$2.25 per 1/4. Also Soy Beans and all kinds of field and grass seed.

SEED DEPARTMENT
Michigan State Farm Bureau
224 N. Cedar Street (5) Lansing, Michigan

FANCY RUSSET AND STANDARD SEED
Potatoes and also a few Cobblers. Clean of seed and disease. Price \$3.00 per bushel F. O. B. Annapolis. BEDFORD, FRUIT FARMS, Annapolis, Md. D. H. Meyer & Son, Prosser, Kansas Co., Pa.

Write for the RAWLINGS Catalog



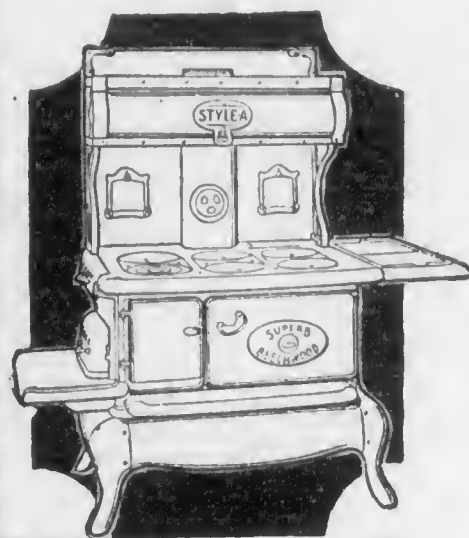
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in 6 to 8 Weeks—Earn \$150 to \$400 a Month. The Rahe Practical Method gives best and quickest training. Big demand for our graduates everywhere because of greater ability. The success of 25,000 graduates proves superiority of our practical training methods.
Rahe Auto & Tractor School
World's Oldest and Greatest
Twice more equipment and twice more floor space used in daily practice than any auto school in America. Every man 18 years and older can learn here quickly. Plenty of room for individual practical instruction.
WRITE TODAY Free 64-page book. Special Tuition rate and proof of opportunity on request. Address School nearest you.
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"RED STAR" TRANSPLANTER

Does the work regardless of weather conditions. It is accurate and saves time and labor. Plants thrive and grow evenly. It is a winner for dealers. Catalog now ready. Get our prices and we will get your orders.

RAWLINGS IMPLEMENT CO.
BALTIMORE, MARYLAND.



Beechwood

THE QUAKERTOWN STOVE WORKS
Quakertown, Pa.

Use Dandelion Butter Color



Add a half-teaspoonful to each gallon of winter cream and out of your churn comes butter of golden June shade to bring you top prices.

DANDELION Butter Color

All stores sell 35-cent bottles, each sufficient to keep that rich, "Golden Shade" in your butter all the year round. Standard Butter Color for fifty years. Purely vegetable. Meets all food laws, State and National. Used by all large creameries. Will not color the buttermilk. Tasteless.

Wells & Richardson Co., Burlington, Vermont.



KILL ROACHES with
Bee Brand Insect Powder
15-40¢ Sold Everywhere
M. CORMICK & CO. BALTIMORE.

WANTED
Women to Work in Boarding House
ON LARGE FARM. GOOD WAGES AND PLEASANT SURROUNDINGS. PERMANENT.
WINTERTHUR FARMS,
Winterthur, Del.

HOMEWOL YARN
50% 4-Oz. Skein. Guaranteed 100% Virgin Wool. Brilliant colors: white, turquoise, navy, leather, moose, navy, oxford, black. Attention color desired. Be convinced that it is the finer kind of knitting yarn you ever used—order now. **HOMEWOLLEN MILLS** Est. 1876. 200 N. Main St. Easton Rapids, Mich.

DIRECT FROM THE MILL

THE housewife who owns a Beechwood range puts confidence in it. She knows that it will give the good results expected of it.

She knows too, that it has added much to the beauty of her kitchen. This beautiful enameled range will not chip, craze, or crack. Heat will not discolor it. And it cleans easily. All that is needed is a damp cloth. An oiled cloth cleans the polished top.

Choice of three colors—blue, gray and brown. Write for folder.

COMBAULT'S CAUSTIC BALSAM

The Perfect Liniment For External Use on The Human Body

It is astonishing how quickly Caustic Balsam relieves Stiffness and Lameness, Rheumatism, Neuralgia, Strains, Sprains, Lumbago, Backache, Sore Throat, Chest Cold, Stiff Joints, etc.

Serious results through Blood Poisoning are liable from scratches, cuts or wounds from rusty nails or other metal. This great remedy applied at once will prove a preventive, is a perfect antiseptic, soothes while it heals. What it has done for others it will do for you.

Write us for any information desired. \$1.75 per bottle at druggists or sent parcel post on receipt of price.

THE LAWRENCE-WILLIAMS CO.,
Cleveland, Ohio

SPECIAL COMBINATION OFFER
5 lbs. A-R-E-CO. \$2.00
3 lbs. COFFEE (Bean or Ground)
3 lbs. TEA (Sample Mixed)
Buy direct from wholesaler and save 10c on every pound

Sent Parcel Post Prepaid on Receipt of Your Check, Money Order or Cash. Satisfaction Guaranteed or Money Back.
Gillies Coffee Co., 233-239 Washington St., New York City. Established 81 Years.

Mantles That Last Longer and Give Better Light
Coleman
Reinforced base on every Coleman Mantle. Stands up under rough usage. Outlasts all others. Gives the most light. Made in our own factory by special patented process. Buy from your dealer, or order direct from nearest office. Dept. C32. Price per doz. \$1.50.
THE COLEMAN LAMP COMPANY
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Ride a Ranger
The finest bicycle ever built. 44" frame, 44" wheels, 44" handlebars. Save \$10 to \$25 on your bicycle. The 12 months to pay plan. No money down. No interest. No risk. 30 Days Free Trial. On the 31st day, if you are not satisfied, return it for a full refund. No questions asked. Write today for information. Free literature. **Meade Cycle Company**, Dept. L-18 Chicago, Ill.

Largest Auto Wreckers in Pennsylvania
NEW AND USED PARTS FOR ALL CARS
At a discount of 30 to 75%
Mail orders promptly attended to.
Overland and Studebaker parts a specialty.
GREENE AUTO & PARTS CO.
261 N. River Street, Wilkes-Barre, Pa.



Of Interest to Farm Women and Girls

Looking Into the Future

A YOUNG MOTHER who refused to spread her meals on an untidy cloth, do without the little niceties of table manners and usage, and generally held herself to a system that her friends thought burdensome, explained her position to a friend one day. "You see, I must teach these children good manners, because some day they may occupy positions of responsibility where good manners mean more than wealth or even education. Quite likely we will never have anything to leave them but what education and home training we can give them, so I am determined to make the most of what little we can do for them."

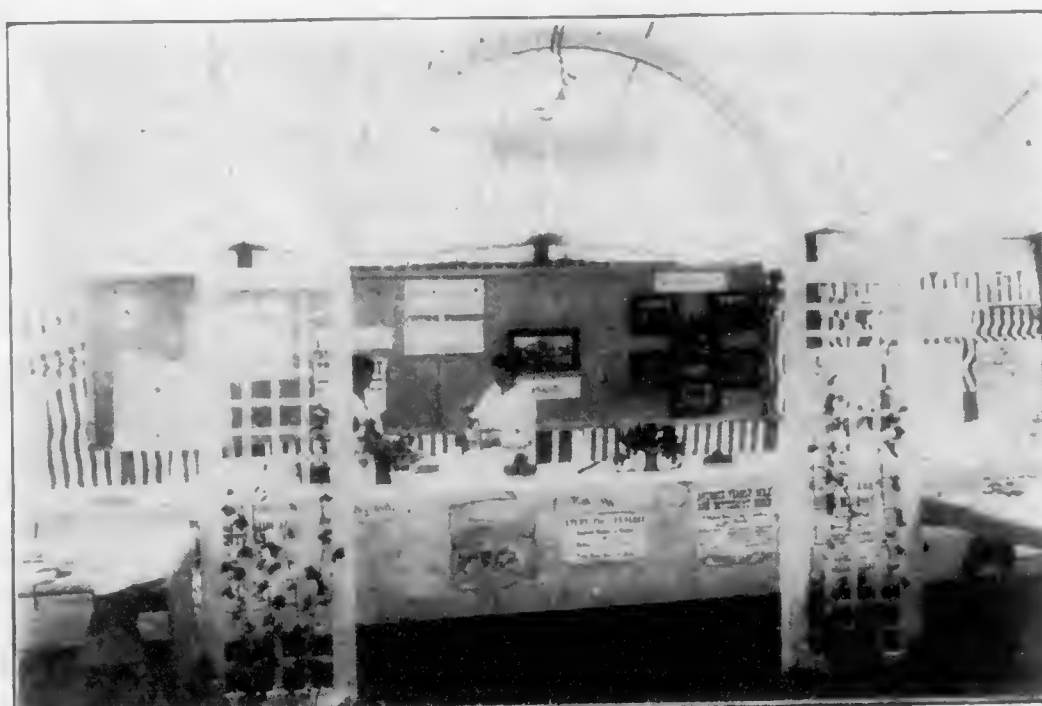
Now that woman was a tenant's wife and had little to do with, but her home was clean, cheerful, neat, orderly and happy. The table had flowers in season if nothing more than a bunch of clovers, the cloth was clean and the dishes were not cracked and stained, though they were only the ten-cent store variety. Every member of the family took pride in the dainty belongings that

trusted to your care, but no amount of money could buy the priceless inheritance that the children of right-minded parents enter into even while they are still too young to appreciate it.—Hilda Richmond.

USING THE OLD HENS

In culling out the old and heavy fat hens the market price will usually be found much lower than for the yearling ones, so it is profitable to use them on the home table rather than sacrifice them in market. Every year when the flock is gone over a few will slip thru, and tho they may lay for a short time in spring they are far more profitable to furnish variety in the salt meat diet than for egg production.

Old hens must be cooked until the meat will drop from the bone to be really worth much and must be served with thick, rich gravy to be fully appreciated. A big fat hen will make a company dinner, or two meals for the ordinary family. The best pieces can be cooked with gravy



Milk Products Booth, Morris Co., N. J. Home Economics Exhibit

they were of the cheapest, and in that home nobody needed a lecture about trying to be orderly.

If there is any individual to be pitied it is the self-conscious boy or girl who has never received the home training that is the birthright of every child. No matter if chicken raising is profitable, and the sale of butter an inducement to the wife and mother to neglect the home, the children have rights that must be respected. It may look like kindness to indulge the children and let them go to school when they please, stay at home when they please, eat, sleep and play as they please, but remember, the children so slighted and cheated will be the first to blame the parents when the awakening comes. The mother and father who have no vision of the future with their well-trained children occupying places of trust and responsibility in the community will never measure up to the highest standard of parenthood, but on the other hand the parents who hold themselves and their boys and girls to the better, finer things of life will reap their reward in the future. It takes time and patience and untiring effort to train the children en-

and dumplings for one day, while the poorer pieces can be worked up in pie, shredded chicken, or in noodle soup. Many ladies take the best parts of two hens for stewed chicken when there is company and use the poorer pieces later. This is a fine arrangement and makes the chicken platter look very attractive when guests are present, while the bony pieces have just as good meat for the family, and some people like it better.

First of all, clean and cool the chicken properly so there is no danger of ptomaine poisoning. Put the pieces into a kettle and cook until done. Remove the chicken to a warm place and make the dumplings and gravy, or make all gravy with the broth and serve with hot baking powder biscuits split in half. This is an old-fashioned company dish that is coming back to the great delight of the older people. Chicken with rice is also good, and so is chicken with waffles or chicken with macaroni. This refers to the best pieces where looks count. Chicken with rich gravy served with tender brown waffles is a dish fit for a king. Now for the bony pieces. Cook

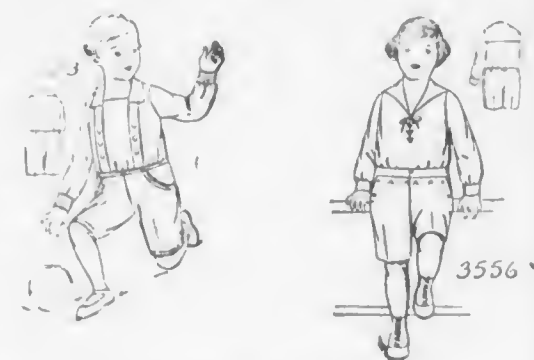
PENNSYLVANIA FARMER PATTERNS

Give figures and letters of each pattern exactly as printed at beginning of each description or we will not be responsible for correct fitting of orders. Give bust measure when ordering waist patterns, waist measure for skirt, and age for children's patterns. Address Pennsylvania Farmer, 261 S. Third Street, Philadelphia, Pa.

NEW SUITS FOR LITTLE BOYS

3503.—Smart Suit for Small Boy.—Pattern is cut in 5 sizes: 3, 4, 5, 6 and 7 years. A 4-year size will require 2 yards of 44-inch material. Serge, chevot, flannel, pongee, seersucker, galeata and linen. Pattern, 10 cents.

3556.—Comfortable for the Lad.—Pattern is cut in 4 sizes: 2, 4, 6 and 8 years. A 6-year size will require 2 1/2 yards of 36-inch material. One could use drill, jean, or madras for the blouse, and flannel, serge or khaki for the trousers; or make the entire suit of serge, gingham, linen or flannel. Pattern, 10 cents.



3557.—Box Jacket.—This model uses the popular fad for embroidery or beading on the loose box jackets seen on the spring suits. The pattern is cut in 6 sizes: 34, 36, 38, 40, 42 and 44 inches bust measure. A 38-inch size will require 2 1/2 yards of 40-inch material. Pattern, 10 cents.

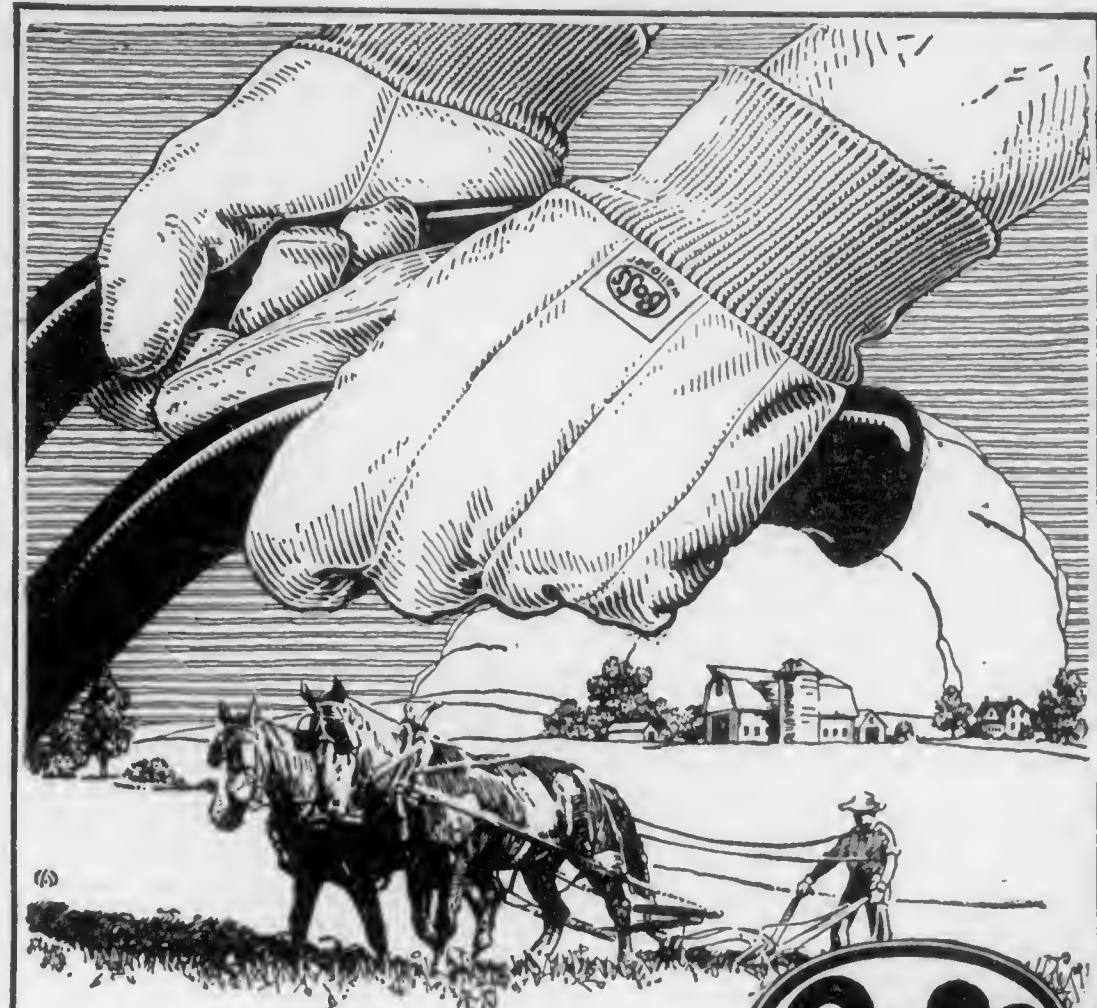


3496.—Simple School Dress.—It is cut in 4 sizes: 8, 10, 12 and 14 years. A 12-year size will require 2 1/2 yards for the Middy and 3 1/2 yards of 27-inch material for the skirt, collar and cuffs. Plaid, sating, gingham or chambray; serge and plaid or check material combined, gabardine, linen and pongee are good for this style. Pattern, 10 cents.

How Everybody Can Wear Gray This Spring.—Gray is the fashionable color this spring, but only the fair and the pink-cheeked dare wear it without first adding a touch of brighter color to the neck or vest.

A House Cleaner Closet.—A closet set apart just for the housecleaning apparatus—dry mops, dusters, vacuum cleaner, brooms and brushes, to say nothing of ammonia, turpentine, scouring powders and soap—it is a housekeeper's dream that might just as well come true.

Window Cleaning Trick.—Rubbing windows every few days with a dry cloth takes but a minute, keeps them shining and put longer intervals between the tedious washing.



For Hard-Working Hands



EVERY day, farmers' hands need protection from grease and oil, cuts, bruises, and many minor injuries. Boss Work Gloves offer this protection.

They are made to stand the hardest, most rugged kinds of work. Yet they are exceptionally flexible. You can adjust a carburetor or handle a screw driver with ease while wearing them.

You will find them useful for a hundred different jobs such as repairing farm machinery, all barn work, plowing and harvesting, handling an axe, driving, painting, installing new equipment, digging post-holes and handling fencing.

Boss Work Gloves come in three styles of wrist—ribbed, band, and gauntlet. There are sizes for men and women, boys and girls. Ask your dealer for them by name.

THE BOSS MEEDY—best quality, medium weight canton flannel.
THE BOSS HEVY—very best quality, heavy weight canton flannel.
THE BOSS XTRA HEVY—finest grade of extra heavy canton flannel.
THE BOSS WALL-OPPER—highest quality, heaviest weight canton flannel.
THE BOSS LETHERPOM—heavy canton flannel with tough leather on palms, fingers and thumbs.
THE BOSS JERZY—highest quality cotton jersey cloth in many colors.
THE BOSS TIKMIT—Roomy mittens made of ticking that wears like iron.
THE BOSS ELASTO—strong canton flannel. Made by a patented process in one weight only.

THE BOSS MANUFACTURING CO.
Kewanee, Ill.

WORK BOSS GLOVES



Every hour in the day
You can use running water under pressure in your home

HOOSIER Water Service

may be used in any home, and once installed, banishes the drudgery and inconvenience of pumping and carrying water by hand. Hoosier Water Service installations are easy to install and to operate. Pumps from any well. If you intend to improve your home it will pay you to become acquainted with Hoosier Water Service equipment.

FREE Upon request we will send you complete details about Hoosier Water Service.
FLINT & WALLING MFG. CO.
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STAR WINDMILLS HOOSIER PUMPS



CRABINE TRIPLE WALL SILOS

YOU can easily rebuild your old broken-down stave silo into a new, permanent Crabine—the handiest, strongest silo made—and save half the cost of a new silo. The Crabine is a great economy because its moderate first cost is its only cost for many years. The inner wall is of upright staves, closely fitted. Then comes a wall of Silafelt—waterproof, air-proof, frost-fighting. Outside is the spiral smooth-finish Cranelox covering that winds to the top—protecting and reinforcing every square inch. No hoops, no repairs—your silage is better, your investment is safer, your work and anxiety are reduced.

Ask us for full particulars of new or renewed silos. Write today for literature and price lists.

CRABINE SILO CO., Inc.
Box 140, Norwich, N. Y.



Fuller Milk Pails

INDIANA Silos produce milk or beef at lower costs and help you increase your profits. You never needed to reduce costs more than now.

Over 60,000 American farmers, who own 75,000 Indiana Silos are already enjoying a bigger profit because of their silos.

No other silo has ever won such an endorsement from the American Farmer.

Write now for reduced prices, early buyers' proposition and easy payment plan.

The Indiana Silo & Tractor Co.
34 Union Building
ANDERSON INDIANA

INDIANA SILO

\$24.95 *upward* **AMERICAN CREAM SEPARATOR**
On Trial. Easy running, easily cleaned. Skims warm or cold milk. Whether dairy is large or small, get handsome catalogue and easy monthly payment offer. Address
AMERICAN SEPARATOR CO., Box 5062 Balastrides, N. Y.

Strawberry Plants

Do you want the best? We have ten varieties selected out of a hundred. All kinds of plants and seed for the garden. Send for our new catalog today.
ROMANCE SEED & PLANT FARM,
Caled Boggs & Son, Cheswood, Del.



The "Meat of the Coconut"

EVERY dairyman should realize the importance of the proposed legislation, recently introduced in the Legislatures of Pennsylvania, New Jersey and New York, to prohibit the manufacture and sale of all compounds of skim milk and vegetable fats. The coconut oil interests are fighting the proposed laws most vigorously for their product is the one chiefly used to make up these compounds which are sold as substitutes for pure dairy products.

In Pennsylvania the measure is known as House Bill 497 and in New Jersey, Assembly Bill 526. Among these compounds or substitutes which are freely marketed in the State of New Jersey are the following substitutes for evaporated milk, made in the mid-western and far western states: Hebe, Carolene, Enzo, Nyco, Nutro and Silver Key.

Not only are these compounds offered for sale in small or "family size" packages or cans, but are sold in bulk for subsequent use in restaurants, in the cooking of milk dishes, in ice cream, as cream with coffee or cereals. They have been extensively used, it is stated, in the poorer class restaurants. One large concern operating in New Jersey has recently had its product, a mixture of cream and coconut oil, ruled out of New York City Markets by the Board of Health.

Comparative Nutritive Value

At recent hearing before the Agricultural Committees of the lower houses in Pennsylvania and New Jersey, Dr. McCollum, of John Hopkins University, testified as to danger to public health and human welfare of the use of such milk substitutes. We quote from him as follows:

"This practice of substituting vegetable fats for butter fat in milk has become a widespread evil within recent years, and has far-reaching consequences. The practice should be combated by every possible means because of the inferiority of such vegetable fats, from the nutritive standpoint, to butter fat.

"In 1913, I was able to demonstrate by experiments on animals that butter fat contains a substance which is essential for growth or for the maintenance of normal health in the adult. This substance is not found in adequate amounts in any of the cereal grains, peas, beans, potatoes, sweet potatoes and other seed, tuber and root vegetables which form so large a part of our diet. The only practical source of it in the nutrition of young children and infants is the fat of the milk which they consume. If by any chance the milk used for feeding infants or children is deprived of its fat and an inferior type of fat substituted, disastrous results are certain to follow if the food is thus made faulty for any appreciable length of time.

"I have studied very carefully both by means of animal experiments and with human subjects and thru a careful study of the effects of various types of restricted diets on man in different parts of the world, and am convinced that the use of liberal

amounts of milk and other dairy products forms a factor in our nutrition which is of greater importance than any similar fraction of the diet served from other sources. This is true because milk, especially because of the peculiar nature of its fats, furnishes an indispensable dietary factor, not abundant in any of the ordinary cheaper foods. I have become strenuously opposed to permitting the sale of skimmed milk with which has been incorporated vegetable fats in place of its original butter fat content, for such milk imitations are inferior to whole milk. I regard the sale of such products as nothing less than trafficking in infant life, for it has been shown by a number of investigations that such products are actually, whether intended by the manufacturers or not, sold for the feeding of infants in some instances.

"Any legislation permitting the substitution of vegetable fats for milk fats in any human food should be vigorously contested and opposed by everyone interested in human welfare."

Survey of Penna. and New Jersey

Evaporated milk substitutes have been found by investigation to be offered for sale in large quantities in grocery stores in Pennsylvania and New Jersey.

With a view of deceiving possible buyers, these substitutes are sold in packages of about the same size and content and with a similarity of labels. Sample cans of these goods are displayed by dealers on the shelves along with the standard brands of condensed and evaporated milk and generally at prices prominently displayed and lower than those obtained for standard brands of milk.

In every city, visited from Jersey City to Pittsburgh, the greatest majority of dealers handling substitutes was always in the poorer section among foreigners or the ignorant who would not be able to appreciate the full significance of the label. The method of their sale as proven by these facts clearly proves that they can be classed as a fraud.

Present State Laws

What has been done in the way of legislation in the other states in connection with these milk substitutes, compounds and imitations, is pertinent.

Ohio has probably gone farther in its campaign against these unfair and fraudulent substitutes than any other state. Section 12725 of the General Code of Ohio forbids the sale of condensed skimmed milk in Ohio. That the sale of Hebe under this law was prohibited, was tried in the District Court of Ohio and it was decided that Hebe was condensed skimmed milk and therefore within the condemnation of the Ohio Statute.

The opinion of the Court was in part:

"Whether Hebe is as wholesome and nutritious as condensed milk is unimportant, so long as it is used as an instrument of fraud. Producers of an article of food which may be used to deceive the public are not

favored in courts of equity."

Again in the same opinion:

"The Constitution of the United States does not secure to any one the privilege of manufacturing and selling an article offered in such a manner as to induce purchasers to believe they are buying something which is in fact different from that which is offered for sale."

The case was carried to the United States Supreme Court which upheld the decision of the District Court.

Wider Knowledge Needed

The public needs wider knowledge as to this traffic in substitutes.

The hearing in Harrisburg and Trenton, before the respective legislative committees, have not excited the widespread public interest there should have been. The members of the Legislature do not appear vitally interested themselves in the bills nor do they seem to have been hearing from their constituents.

These bills are necessary to prevent fraud and to protect the public health, to promote the normal growth of infants and children necessary and for the health of mankind, for the welfare of humanity.

RAISING DAIRY CALVES

By Melville Wettach

(Continued from Last Week.)

The following suggestions should be helpful in guiding the dairyman in the care of his calves.

- 1—Do not overfeed.
- 2—Do not feed the foam from separator milk.
- 3—Feed regularly and in small quantities.
- 4—Always feed at a temperature of 95 or 100 degrees F.
- 5—Keep feeding utensils scrupulously clean.
- 6—Give the feed in a clean, wholesome condition.
- 7—Give the calf water to drink.
- 8—Be regular in everything.
- 9—Do not allow the calves to suck udders. It may ruin a good udder and also cause bloating.
- 10—Weigh or measure all feed.
- 11—Boil all milk to prevent disease, especially if the skim milk is from outside sources.
- 12—Keep them growing. Every sickness is a setback.

Housing

If possible, it is best to have a separate barn for the calves. They do best in small pens and in small groups. In this way in case of disease, it is confined to a small area and the calves are easily handled. Where there are a number of calves, each one should have a stallion as this simplifies feeding and gives them all the same chance to get their share. Stallions help to do away with the practice of sucking udders. Calves will not, as a rule, do this if they are fed their milk and then their grain immediately following it. The pens should be easily accessible and well bedded at all times. Never allow the pens to become damp, particularly in the wintertime. The pen should be free from drafts, but cold air never hurts a calf provided it is dry. Sunlight is the best disinfectant so the house should afford good light as well as ventilation.

Calves of all ages need plenty of exercise and a good way to obtain this is to have a lot or pasture adjoining the calf barn which the calves can have access to in good weather. If there is a large lawn available, a number of the young

calves can be staked out and left there all of the time as long as the weather permits. Always see that the calf has a fresh grazing area when necessary. Never leave them out so that they get a cold, drizzly rain on their backs as this is a good way to give them pneumonia.

Management

Those calves which are not purebred should be dehorned when they are from three days to two weeks old, by rubbing the "buttons" with a stick of moistened caustic potash. The stick should be wrapped with paper to protect the operator and the "buttons" only rubbed until they appear slightly red. Be careful that the potash is not wet so that it will run into the eyes of the calf as this will cause blindness. It is best to do the dehorning on a cool day, if possible, so that the flies will not annoy the calf. The months of July, August and September are the months when the calves need the most attention as these are the fly and sick months.

In the winter more care is necessary than in the summer, as a rule. The worst time is during the months of January, February and the early part of March. The trouble at this time is principally from lice and white scours. Be sure that the calves have warm, dry, light, well ventilated quarters to go into in the fall and the trouble will be greatly reduced. If there is a sudden drop in the weather, make a corresponding one in the calves' feed and gradually raise the quantity as weather regains its normal temperature.

Sickness and Disease

The general symptoms of sickness show up usually with one of the following, a hot and dry nose, loss of appetite, dull eye and a ruffled coat, a doxy appearance, coughing or scouring. The following are the common ailments of calves.

Bloat may be caused by sucking cars or udders, drinking foamy milk, eating wet alfalfa or having the run of an alfalfa field when hungry, or from eating mouldy feed. The first thing to do is to try to reduce the amount of gas formed in the calf by keeping the calf moving. Do not allow it to lie down. In calves under two months of age an injection may help but it is useless on calves over this age as they have the four stomachs well developed by this time. A good remedy is a solution of one teaspoonful each of turpentine and 20 per cent creolin with four table-spoonfuls of castor oil. Mix this with a little milk to prevent it from sticking to the sides of the bottle. The best way to administer a drench is by means of a long necked bottle. Insert the neck in the calf's cheek and keep the calf's head slightly elevated. Never hold its tongue as this only hinders swallowing. Stroke the calf's throat will induce swallowing. Keep the calf moving.

Ringworm is a fungus disease of the skin, attacking the calves principally over the head and forequarters. It appears as a grayish scab and spreads, causing the hair to fall out. To treat this, wash the scabs with warm, soapy water and paint with iodine. This treatment must be kept up if any results are to be secured.

(Continued Next Week.)

"Experience teaches that it is men and women who pay attention to small savings that become wealthy. By saving nickels and dimes, a thrifty person lays the foundation of a fortune."—James A. Garfield.

SCHUMACHER PRICES ARE DOWN

DOWN go Schumacher Feed prices to pre-war basis—
DOWN to a level with the prices you get for the products you sell—
DOWN where Schumacher is a much cheaper feed than ground corn or oats, middlings or bran—
DOWN to a point where you cannot afford to miss the BIG SAVING today's prices give you on a feed that has

MORE food value than bran or middlings.
MORE food value than oats.
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MORE food value than brewer's grains.

The Cheapest Feed to Feed

Therefore, don't let the fact that you have plenty of corn or oats keep you from buying Schumacher Feed at today's surprisingly low prices. Fed with gluten and cottonseed meal as your protein concentrates, it makes the cheapest feed you can feed. If you have a surplus of home-grown grain, it will pay you to sell some of it and buy Schumacher Feed. For instance:

Take the question of moisture. 95% of the corn inspected for market grading contains 19½% water—19½ lbs. of water in every 100 lbs. of corn. Better to sell water than to feed it, don't you think? Schumacher Feed is kiln-dried. It is ALL feed.

Now, take the question of digestibility. Schumacher contains 4% more digestible matter than oats; 6½% more than middlings; 12½% more than brewer's grains; 21% more than bran. It is made from the choicest feeding parts of Corn, Oats, Barley, Wheat, with Hominy, Wheat Flour, Middlings and Linseed Meal added, finely ground, scientifically blended.

Start Reducing Your Feed Costs Today by buying Schumacher and you will also start better results from your cows. If your dealer cannot supply you, write to us.

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Send for special Bohon Cream Separator Catalogue. It tells you all about my Direct-From-Factory, Money-saving Prices, with 30 day trial and Money-Back Guarantee.

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Globe Silos are substantially built to keep silage prime, allow the farmer to use the full capacity of his silo and to stand with the least amount of hitching and tinkering.

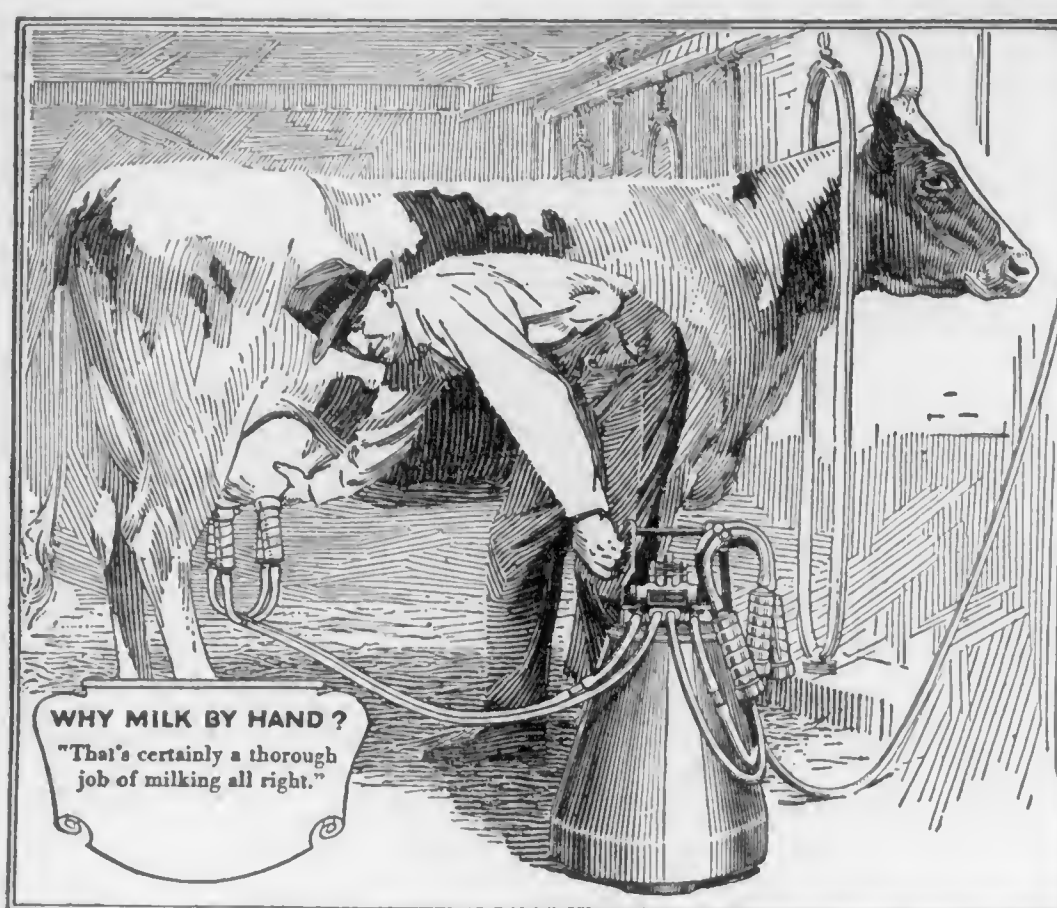
The Globe extension roof insures a silo full to the top.

Globe method of building up staves provides a smooth, strong silo, supported in every direction at every given point. Stave sections are put together with double steel spines and sealed between joints with roofing cement. Thus with the tongue and groove there are 6 points of support and airtightness insured by every stave.

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are the largest handlers of commission hay to greater New York; if you have hay to dispose of communicate with them.

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Men wanted in every locality to own, show and sell famous Cincinnati Silos. Liberal spare-time profits. Full details free with special introductory offer. Hauser-Stander Tank Co., Dept. F, Cincinnati, Ohio.



"The milker has always been ready to do its duty at milking time without any grudge. It has done its work well, milked clean and absolutely kept up the milk flow."—WILLIAM GRANT.

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PERFECTION is the hired man that milks your cows thoroughly and satisfactorily. That means, good milk flow, uniform milking, and clean milking at all times.

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It's an easy task for one man to thoroughly milk 24 cows in an hour's time with the Perfection. This is your opportunity to increase your herd or to milk the same herd with less labor and always get a thorough, satisfactory job of milking.

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RURAL RUSSETT POTATOES
Certified by New York State Potato Association in 1919. Selected for size and high yielding quality. Our Seven Acres field was pronounced by experts the best in the state and yielded 2700 bushels.
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PURE EXTRACTED HONEY
delivered to 2nd postal zone—rich, full flavor, 11.25; Buckwheat, \$1.10; clover, \$2.40 and \$3.00; 60-lb. can, \$11 and \$9; 10-lb. can, \$2.50 and \$2.00. N. L. STEVENS, Venice Center, Cayuga Co., New York.

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Hill selected for eleven years. Free from disease. Certified for eight years. The average yield for eleven years over 300 bushels per acre. Yield in 1920, 335 bushels per acre.

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Price, \$1.50 per bushel in 50-bushel lots, F. O. B. Canandaigua, N. Y. Baza free. Certification for all varieties. This is your guarantee of quality backed by the New York State Potato Association.

These same potatoes graded same as for table stock but not according to N. Y. Potato Association standards, 20 cents per bushel below above price.
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Soy beans, early and late varieties. No. 1 stock. Prices on request.
J. P. COUNCIL COMPANY
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TALKS WITH THE BOYS

LETTERS FROM THE BOYS

Dear Editor—I saw several letters written to you by boys, so I thought I would write one also.

I lived on a farm of 104 acres and had five horses, one colt and fifteen head of cattle. I liked it on the farm and so did father, but my mother did not, so we sold it about two years ago. We are living in the city now, but I do not like it and would rather live in the country. I spend my vacations in the country and like it lots. I have a pair of bantam chickens and I am getting eggs every day.—H. B. Snyder, New Jersey.

Dear Editor—I thought of putting a letter into your paper so the other boys can read it on the Boys' Page. I enjoy reading the page very much and find it very interesting.

I am fourteen years of age and go to the rural school and to Sunday School on Sundays. I cannot see a hard task in being educated. I have two other brothers—one at home and one in the city. We have eighty acres of farming land. We have three horses, ten head of cattle and I have a pig of my own. I appreciate having something of my own. Last year I had rabbits and they brought me a great deal of money.—Sam S. Berks County, Pa.

Dear Editor—I am a boy eleven years old from New York State. I was born in the town of McDonough. My father died about three years ago and Mother died in October soon after my little baby brother was born, two and a half years ago. I have two sisters in Middletown and one in Buffalo, also two brothers in McDonough and one in Coventry.

I went to live with my Aunt, but did not stay there long and at last came to East Pharsalia where I have been for two years. I like the place where I am staying very well.

I got a calf last year and joined the Calf Club. She took \$18 in prizes at the fair.

I got up three subscriptions for the Pennsylvania Farmer and got a fountain pen and I appreciate it very much. I go to school most of the time and have one mile to go. I like the teacher very well. I am in the fifth and sixth grades. I go to Sunday School every Sunday. I think your letter in the March 19th issue would be good counsel for the boys around here. Hurrah, for New York State!—J. Stewart Burk, N. Y.

Dear Editor—I have been reading the boys' letters for some time and have decided to write one also. I live a long way off, but I would like to help to fill the Boys' Page.

I am fourteen years of age and live on a 200-acre farm, five miles from the village. We have fifteen cows and two horses. The school house is a mile and a half from our farm and I am in the seventh and eighth grade. I have a sister older than I am. Hoping your Boys' Page will be a great success, I am—Alton Willey, Greensboro Bend, Vt.

Dear Editor—I am a little York State boy and enjoy reading the boys' letters in the Pennsylvania Farmer very much. My father has been taking the paper for a long time.

I have three sisters older and two younger than I am and then I have

one dear, little brother, two months old. We live on a farm of 100 acres, about three-quarters of a mile from a railroad town. At present, we all have the whooping cough.

I have a cow which was given me when it was a calf. I sold her first calf this spring for \$3.00 which I put in the bank.—Floyd J. Randall.

Dear Editor—I have read the Boys' Page every time it has been published and thought I would write a letter to help fill the page.

I am fourteen years old and am in the eighth grade. I have received several cards for perfect attendance. I live about one mile from the school. I like to go to school, but would rather work on a farm.

We live on an eighty-acre farm and have twenty acres of woods. I raise some potatoes every year, but am going to raise some corn this year. We have three horses, two mules and eight cows.—T. F. S., Delaware.

Dear Editor—My papa is taking this farm paper and we like it very much. I am glad there is a page for the boys.

I am eleven years old and will be twelve July 19th. I help to do the chores and do nearly all the harrowing and break stones to fill up the ruts on our road. I have to do a good bit of work since I can't go to school as we have the whooping cough.

I have one brother and two sisters and their names are: Dwight, Ruth and Erma.

We have two gasoline engines, one for the washing, and one for unloading wheat. We also have an automobile, three horses, seven head of cattle and three calves.—Clayton Shetler, Somerset Co., Pa.

Dear Editor—I have become interested in the Boys' Department of Pennsylvania Farmer, so I thought you would like to hear from New York State.

I am thirteen years old and live on a farm of 174 acres, two miles from Unadilla High School. I am in the sixth grade.

We have thirty-six head of cattle and two horses. We also have a milking machine, three engines and an automobile. My brother and I each have a calf to raise.—Francis Stewart, Del. Co., New York.

Dear Editor—I read the Boys' Page in the Pennsylvania Farmer every week so I thought I would write a letter, too.

I am ten years old and live on a hillside farm of 100 acres in northern Pennsylvania. I have about two miles to walk to school. I have two brothers and one sister younger than I am. I have a little black and white rabbit for a pet.

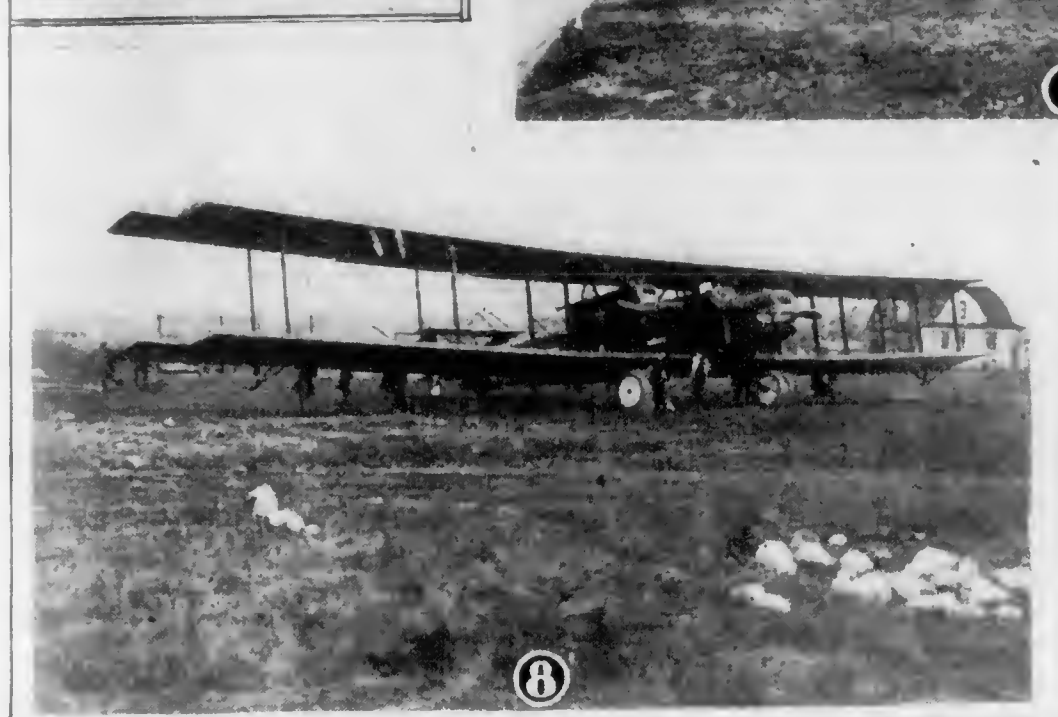
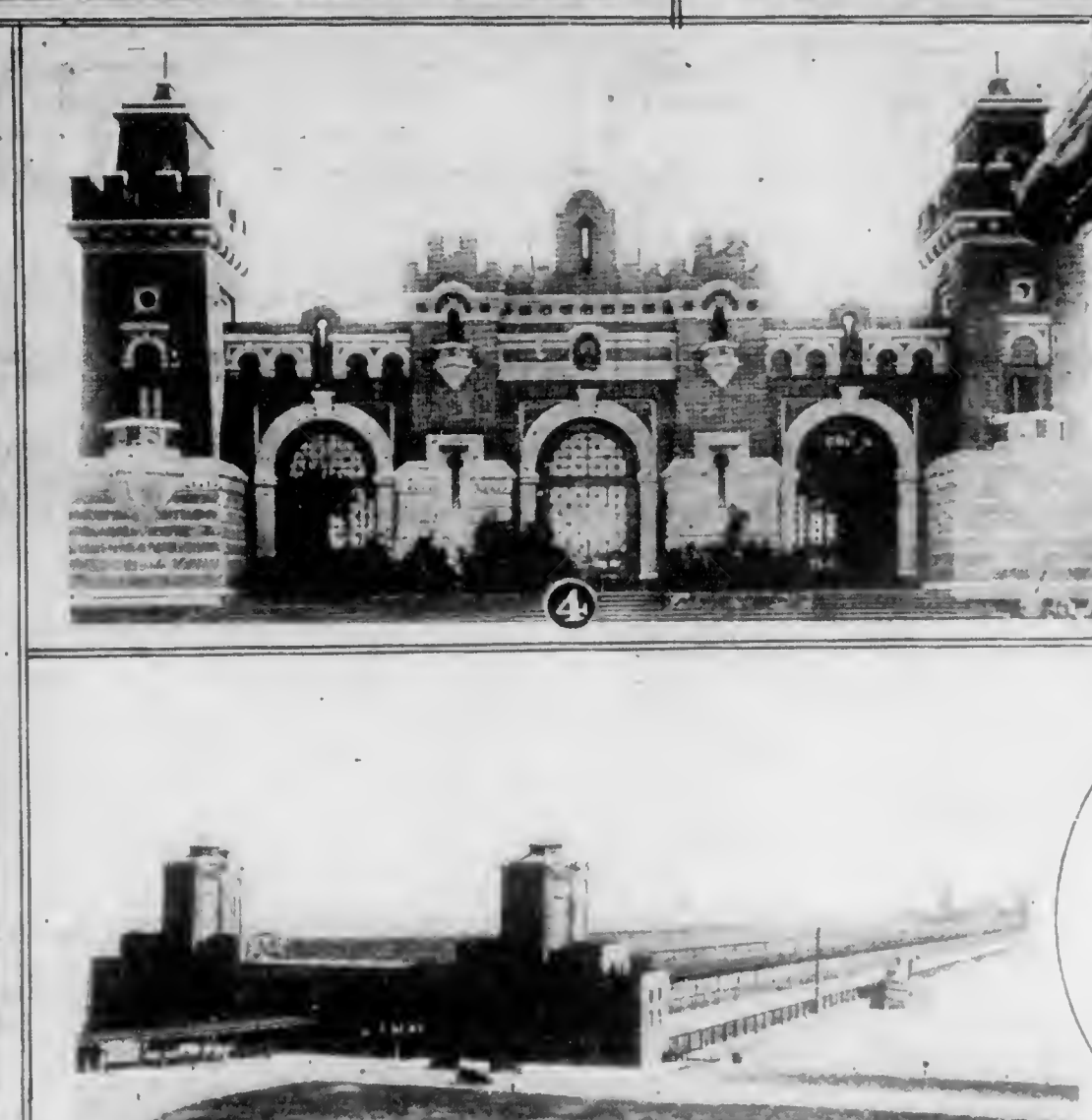
We have a gasoline engine with which we saw wood and run the washing machine. We also have three cows, three horses, three hogs and seventy-five chickens. I hope you will continue to have a page for the boys.—Leonard Ada, Bradford Co., Pa.

Jack—Why is a figure 9 like a peacock?

Jim—Don't know, why?

Jack—Because it is nothing without a tail.—Boys' Life.

PASSING EVENTS IN PICTURES



1—Nell Arnold (left) plays Edith Slater an exciting game of "Biff" while the Gallery looks on. The girls attend the Castle School, Tarrytown, N. Y.
2—Mary Pickford and Jack Herron going over the script of "Thru the Back Door."
3—This Sweater Suit is just the thing for early summer wear—and for sports it has achieved great popularity.

4—One of the Government buildings in the Republic of Argentina, South America.
5—The great Municipal Pier of Chicago is growing in popular favor each day and aside from being a great attraction for visitors, is being utilized for many civic enterprises.
6—Little Mary E. Redding, of New York,

feels much at home atop this steed.
7—Hand-carved bowl of pipe, owned by a Boston citizen. The head is of rare completeness and beauty.
8—Huge Lawson Airplane to start regular New York-Chicago passenger service.
9—Amateur Camera fiends waiting to catch a glimpse of the President.

(Photo. Copyright by Underwood & Underwood.)



Lowe Brothers

A brand new car for less than \$4

NEIGHBOR Bill told me about the bargain. Told me, Wednesday. So, Thursday, I hid my old car good-bye. We shut the door on it, and never looked at it until Saturday morning, when it was time to go to the Sunday School picnic. Wife was considerably fussed. Declared the car wouldn't be fit to use. When I opened the door, there it was, just wreathed in smiles, and hard as you please. Maybe we didn't feel all

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For Hogs and Poultry
Made of selected material, carefully prepared.
Write for prices and information
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Markets

PHILADELPHIA PRODUCE

—Philadelphia, April 4, 1921.

Since our last week's report, the season on the new crop of potatoes has started, the first car of the season from Florida arriving here the latter part of the week and selling at \$12@13 per bu. for No. 1s, and \$11@12 per bu. for No. 2s. This morning there were four more cars here and prices ranged from \$9@10 per bu. on No. 1s and \$8@9 per bu. on No. 2s. Supplies will no doubt get heavier before the week end and lower prices may be expected.

With the appearance of the new crop, the market on the old potatoes will begin to wane. This morning there were around 60 cars of old potatoes here most of which are Penna. grown stock, and prices ranged from 90¢@1.15 per cwt. mostly with some fancy 1.15 higher. No. 1s and No. 2s are main steady and unchanged at 35¢@50¢ per 50-lb. cwt.

Sweet potatoes are meeting a good demand and rule firm for the fancy and prime stock, but the mediums and No. 2s are weaker. Prices sold at \$1.05@1.25 per bu. for Eastern Shore stock with No. 2 Eastern Shore at 65¢@50¢ per bu. Nearly 50 baskets ranged from \$1.35@1.65 for No. 1s with mediums at 75¢@81¢ and No. 2s at 40¢@45¢.

Vegetables—There were three cars of asparagus here this morning prices on which ranged all the way from \$1.00 per dozen bunches. The warm weather now prevailing will soon bring forth New Jersey asparagus. Beans are more plentiful and lower at \$2@4.00 per bu. The old crop of nearby beans remains steady and unchanged at mostly \$1.25@2.00 per bu. New beans from southern points are also steady at mostly 30¢@35¢ per bu. Cabbage after having been extremely low during the past several days met a firmer and higher market today, selling at \$1.25@1.50 per half-barrel hmp. and \$1.75@2.25 per crate. Most nearby carrots are poor and sell slowly at \$1.50@2.00 per bu. but strictly fancy are exceedingly scarce and such would easily bring \$4@5 per bu. Cauliflower is scarce and highest best green stock selling at \$2.50@2.75 per crate. Celery has also taken a sharp advance during the past week and best stock is now selling at \$2.50@3.25 per crate. Cucumbers are getting more plentiful and prices are gradually easing off, good cucumbers selling today at \$3.50@4.50 per hmp. and poor at \$2.25@3.50, while the hot house stock range all the way from \$1.00 per dozen. Fancy eggplants are scarce, best bringing \$5@5.50 per crate while those are poor ones which only bring \$2.50@3.50 per crate. Kale is in ample supply and selling around \$1@1.25 per bu. Southern lettuce is firmer and higher at \$1.50@3.25 per hmp. Some nearby but let lettuce has been on the market but as yet quality is poor, but in another week should be here in larger supply and better quality. Old onions are plentiful and sprouted and hard to sell at 50¢@55¢ sack. New onions are ranging from \$2@3 per crate. Mushrooms remain firm and active at \$1.50@2.25 per lb. Parsley is firmer and higher at \$3@4 per bu. One car of peas from Mississippi sold here this morning at \$4 per bu. some from South Carolina sold at \$3.50@4.50 per hmp. and some from California sold at \$6 per crate. Peppers are firm when fancy at \$4@6 per crate while choice and culls are slow at \$1.50@2.50 per crate. Radishes from the Norfolk section are now very plentiful being about 3 cars here this morning and red radishes sold at 75¢@1.25 per hmp. and white radishes at \$1.25@1.50 per hmp. Penna. grown rhubarb is on the market, but as yet is rather thin and small and sales mostly at 30¢@40¢ per bu. Romaine is firmer and higher at \$1.50@2.00 per hmp. Nearby scallions are very plentiful and lower at mostly 10¢@15¢ per bunch. Fancy tomatoes are firm at \$5@5.75 per crate with choice at \$4.25@4.75 and culls and small ones at \$1.50@3.00 per crate. There were about 12 cars of Norfolk spinach here this morning most of which sold at \$1.75 per bu. with some at \$2 and one car black pack at \$1.50 per bu. Watercress remains practically unchanged at mostly 2@3¢ per bunch. Yams are in light supply but move slowly at \$3.50@4.50 per bu.

Fruits—The only fresh fruit now on the market consists of apples and a few strawberries besides oranges, grapefruit and pineapples. The market is ruling firm on apples as follows: Per bu.; Baldwin, \$3@3.75; Ben Davis, \$3@3.75; Greenings, \$3@4.50; Russets, \$3@4; Spitz, \$4@4.50; Per bushel; Baldwin, \$1.15@1.75; Rome Beauty, \$1.50@1.65; Stayman Winesaps, \$1.50@2; York Imperial, \$1.25@1.50. Other varieties, \$1.25@1.75. There were two fresh cars of strawberries here today which sold at 43¢@60¢ qt. and 23¢@25¢ pint.

Poultry—The market on live poultry is ruling about steady at the following prices: Fowls, fancy, 30¢@35¢; medium fowls, 34¢@35¢; broiling chickens, 50¢@55¢; young roosters, 30¢@35¢; stags, 20¢@25¢; old roosters, 34¢@35¢; ducks, 40¢@45¢. Dressed poultry remains unchanged as follows: Fowls, 33¢@41¢; capons, 53¢@55¢; roosters, 28¢@30¢.

Eggs—There is a good demand for eggs which keeps the market well cleared up at about the following prices at the present writing: Nearby current receipts, 27¢; nearby firsts, 28¢; fancy selected, 29¢; nearby eggs, 36¢@37¢; western firsts, 26¢@27¢; western extra firsts, 27¢@27½¢; southern eggs, 22¢@25¢.

LANCASTER PRODUCE

—April 2, 1921.

With a plentiful supply of eggs on the local markets this morning, the price dropped to 25 cents a dozen at many of the stalls. Vegetables of the season were plentiful with an abundance of dandelion and cut spring flowers. A slight falling off in the prices of potatoes, spinach and onions was noted. Chickens remained high bringing up to \$2.35 each. The quotations:

Butter—Creamery Country butter, 55¢@60¢ lb.; creamery butter, 60¢ lb.; eggs, 25¢@28¢ doz.; duck eggs, 40¢@45¢ doz.; goose eggs, 40¢@50¢ each.

PITTSBURGH PRODUCE

—April 2, 1921.

Vegetables—Potatoes, Mich., \$1.70@1.80 sack; York State bu., \$1.70@1.80; sweet potatoes, \$2@2.25 hmp.; onions, Spanish, \$1.75@2.25; do h. g. 100-lb. sack, 75¢@81¢; cabbage, h. g. bu., \$1.05@2.10; cauliflower, \$2@2.25; Brussels sprouts, qt. 20¢; asparagus, doz. \$2.25; shallots, doz. 40¢@60¢; watercress, doz. 25¢@35¢; spinach, 100-lb. sack, \$1@1.10; kale, bu., \$1.75@2.25; lettuce, 3-lb. bu., 45¢@50¢; do 10-lb. \$1.40@1.60; beets new, hmp. \$1.15@1.30; radishes, doz. 25¢@35¢; tomatoes, Fla. crate, 50¢@60¢; cucumbers, h. g. crate, \$5@6; eggplants, \$2@2.50; carrots, new, hmp. \$1.25@1.60; celery, Fla. crate, \$2.75@3.10; do Cal. crate, \$6.75@7.25; rhubarb, 3-lb. bu., \$1.50@2.00.

Fruits—Apples, Wash. bu., \$2@5; straw berries, qt. 50¢@60¢; cranberries, bu., \$13@15.

Poultry—Live, small fowls, 34¢@36¢ lb.; do heavy, 36¢@38¢ lb.; springers, 32¢@35¢ lb.; turkeys, 50¢@60¢ lb.; ducks, 35¢@40¢ lb.; dressed—Hen, 45¢@50¢ lb.; roosters, 32¢@35¢ lb.; ducks, spring, 45¢@50¢ lb.; turkey, hmp. dressed, 65¢@70¢ lb.; butts, 53¢@55¢; cooking, 54¢@54½¢; tubs, 53¢@55¢; full cream, 29¢@30¢; Wis. Swiss, 50¢@52¢; Swiss, 5-lb. brick, 32¢@33¢; Longhorns, 30¢@31¢; Limburgers, 1-lb., 33¢; Eggs—Fresh select, 29¢@30¢; current receipts, 24¢@25¢.

YORK PRODUCE

—April 4, 1921.

There has been little change in prices and conditions since last week. The home grown produce yet in the hands of the truckers is dull and low in price. The southern goods are coming in pretty fast. The high prices and a finding a rather ready sale. Eggs—20¢@24¢ per dozen. Butter—Country, 50¢@55¢ lb.; separator, 55¢@60¢ lb.; milk, 10¢ qt. Poultry—Hens, 20¢@32¢ lb.; dressed, \$1.50@1.80 each.

Vegetables—Potatoes, 5¢@9¢ ½-pk.; 25¢@60¢ bu.; cabbage, 20¢@28¢ hd.; lettuce, 8¢@25¢ hd.; onions, 5¢@8¢; beets, 5¢ box; beans, 20¢@25¢; pea beans, 15¢@20¢ qt.; lard, 15¢@18¢ lb.; ham, sliced, 40¢@45¢ lb.; whole, 40¢@45¢ lb.

Wholesale Grain Market—Wheat, \$1.65; corn, 55¢; oats, 55¢; rye, \$1.25; bran, \$35 ton; middlings, \$39 ton.

NEW YORK PRODUCE

—April 4, 1921.

Butter firm. Receipts, 3817. Creamery, higher than extras, 51¢@52½¢; creamery, extras, 52¢@53½¢; firsts, 48¢@51¢; 188 lb. cur. make, No. 2, 21¢.

Eggs steady. Receipts, 24,836. Fresh gathered, extra firsts, 29½¢@30¢; firsts, 26½¢@29¢; state, Penna. and nearby western hennery whites, firsts to extras, 32¢@38¢; state, Penna. and nearby western hennery browns, extras, 34¢; do gathered browns and mixed colors, firsts to extras, 28¢@32¢; sternage packed, extra firsts, 31¢@31½¢; do firsts, 29½¢@30½¢.

Cheese firm. Receipts, 3277. State, whole milk fats, held specials, 27½¢@29¢; do average run, 25¢@26½¢; state whole milk fats fresh, specials, 23½¢@24½¢; do average run, 23¢.

Live Poultry steady. Broilers, 55¢@61¢; chickens, 28¢@45¢; fowls, 33¢; roosters, 20¢; turkeys, 30¢@35¢; dressed, washed, Western chickens, 34¢@34½¢; fowls, 30¢@42¢; roosters, 23¢@28¢; turkeys, 50¢@62¢.

BALTIMORE PRODUCE

—April 4, 1921.

Butter—Creamery, Western separator, extra, 48¢@49¢ lb.; firsts, 46¢@47¢ lb.; nearby creamery, 45¢@46¢ lb.; firsts, 43¢@44¢; dairy firsts, 27¢@28¢ lb.; firsts, 23¢@24¢; rolls, W. Va., 20¢@21¢ lb.; firsts, 17¢@18¢; do Md. and Penna., 21¢@22¢ lb.

Eggs—Western Md. and Penna. nearby, firsts, loss off, 25¢ doz.; Eastern Shore, Md. and Va. firsts, loss off, 25¢ doz.; Western (Ohio), firsts, loss off, 25¢ doz.; West Va. firsts, loss off, 24¢ doz.

Live Poultry—Chickens, young, large broods, 45¢@50¢ lb.; spring, 1½ lb.; 20¢; old hens, over 4 lbs., 36¢@37¢ lb.; do small, 36¢@37¢ lb.; Ducks—Muscovy and mongrel, young, 24¢@35¢ lb.; white Pekins, young, 37¢@38¢; do, 4-lb. and over, 35¢@36¢ lb.; do smaller poor, 32¢@33¢ lb.; pigeons, 45¢@50¢ pair; young, 45¢@50¢ pair; guinea

LIVESTOCK MARKETS

—April 4, 1921.

EAST BUFFALO
Cattle—Receipts, 2250; shipping steers, 68.75@10; butchers, \$8@9.15; yearlings, \$8.50@10; heifers, \$5.50@8; cows, \$2.25@7.50; bulls, \$4.50@5.50; stockers and feeders, \$5.50@7.50; fresh cows and springers, \$6.00@12.00.
Hogs—Receipts, 2700; 50c lower: \$5@11.50.
Hogs—Receipts, 12,800; heavy, \$9.50@10.25; mixed, \$10.50@10.75; Yorkers, \$10.75@11; light do, \$11@11.50; pigs, \$11.25@11.50; roughs, \$8.25@8.50; stags, \$5@5.50.
Sheep and Lambs—Receipts, 12,400; lambs, \$6@6.25; yearlings, \$6@8.50; weathers, \$6.50@7; ewes, \$6@6; mixed sheep, \$6.25@6.50.

PITTSBURGH
Cattle—Receipts, 1800; steers, \$9.40@10; heifers, \$7@8.50; cows, \$6@7.75; calves, \$7@8.50; heavy yearlings, light do and pigs, \$9@9.50.
Sheep and Lambs—Receipts, 6000; lower: top sheep, \$6; top lambs, \$9; steady: Calves—Receipts, 1000; lower: top, \$11.

LANCASTER, PA.
Cattle—Receipts, 319; fairly good market; prices steady: steers, good, \$9.25@9.75; medium, \$8.25@8.75; common, \$7@8.25; bulls, fair to good, \$7@7.50; medium, \$6.25@6.75; common, \$5.25@5.50; choice to prime, \$8.25@8.75; medium, \$7@7.75; common, \$5.50@7; cows, good to choice, \$5.50@6.25; medium, \$4.25@5.50; common, \$3@4.25; canners and cullers, \$1.50@2; feeding steers, good to choice, \$7.75@8.50; common, \$5.50@7.25; stock steers, good to choice, \$8@8.50; common, \$5.50@7; stock bulls, good to choice, \$6.50@7; common, \$5@5.50; calves, good to choice, \$11@12; medium, \$10@11; common, \$6@10.

NEW YORK
Cattle—Receipts, 4270; steers, \$7.50@9.85; bulls, \$4.50@6.35; cows, \$1.75@6.50.
Hogs—Receipts, 7400; steady: veals, \$6@6.75; 100-lb. hogs, \$5.60@6.10; medium, \$5.60@6.10.
Sheep and Lambs—Receipts, 4835; steady: sheep, ewes, \$4@6; culls, \$6.50@7; 100-lb. hogs, \$5.60@6.10; medium, \$5.60@6.10; heavy hogs, \$10.50; roughs, \$8@8.50.

PHILADELPHIA LIVESTOCK
Receipts for week ended April 2:
Total for week 2245 7646 8152
Previous week 1876 514 4487
Cattle—1764 head as against 2244 previous week.

Beef Cattle—Steers and cows were dull and receding, due to liberal offerings and increased pressure to sell. Mutton was slow of sale and weaker, with supplies largely of medium and inferior stock, which had to be moved out on buyers' terms. Quotations: Steers, good to choice, \$9@10; common to good, \$6@8; do local, 5¢@6; bulls, 5½¢@7; calves, extra to choice, \$12.50@13; fair to good, \$11@12; common, \$8@10; Tennessee choice, \$11@11.50; other southern, \$6@8.

Sheep and Lambs—There was a fair demand for sheep and lambs of desirable quality and values generally ruled steady, with supplies moderate. We quote: Shorn sheep, weathers, extra, \$6@6.25; do good to choice, \$3@5.50; medium, \$3.50@4.50; do common, \$2@2.50; ewes, heavy fat, \$4@4.50; lambs, spring choice, \$10@10.25; medium, \$8@9.50; common, \$5@5.50; hot house per head, \$6@10.

Hogs—Trade was slow and the market was weak and easier, due to heaviest outside advances and more liberal offerings. We quote: Best western, \$12.50@13; nearby good, \$11@11.75.

City Dressed Stock—Steers, heifers and cows ruled steady, with moderate supplies, but trade was quiet. Lamb of desirable quality was in fair request and steady. Mutton was dull and easier, with supplies in excess of requirements. Other kinds were quiet and without important change. We quote: Steers, 15¢@20¢; heifers, 12¢@14¢; cows, 12¢@14¢; calves, city dressed, choice, 24¢@25¢; country dressed, 20¢@21¢; lambs, 24¢@25¢; common, \$5@5.50; hot house per head, \$6@10.

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NEW YORK HAY AND GRAIN

—April 2, 1921.

Feed—The demand for mill feed was again very slow and buyers continued to hold off notwithstanding the fact that prices were at low levels.
Hay—City feed barn, \$28; mid-dlings, \$27; in 100-lb. sacks; red dog, \$28; nominal, in 100-lb. sacks; Western swing hogs, standard middling, \$27; flour middlings, \$31.50; red dog, \$28; oil in 100-lb. sacks, 30-day shipment. Oat feed, \$13; rye middling, \$26; white hominy, feed, \$30; in 100-lb. sacks. Cottonseed oil meal, 35 per cent protein, \$32; linseed oil meal, \$43, in 100-lb. sacks.
Hay and Straw—There were about 55 cars in the yard at 33d street this morning and about 25 cars were unloaded yesterday. There is very little trade and the market is generally in buyers' favor. In Brooklyn offerings are light and it is possible that a moderate demand for it is correspondingly light. Oat and wheat straw largely nominal.

Hay—Large bales, timothy, No. 1, \$30@32; No. 2, 28¢@29; No. 3, 25¢@26; shipping, \$21@23; no grade, \$15@18; clover, mixed, fancy, No. 1, \$20@22; No. 2, \$18@20; alfalfa, second cutting, \$24@26; first cutting, \$18@20.

Straw—Large bales, No. 1 rye, \$19@20; No. 1 rye, \$18@19; No. 2 rye, \$17@18; wheat—No. 2 red, c. i. f., \$1.64; No. 2 hard winter, \$1.66; No. 2 mixed winter, \$1.67; No. 2 yellow, 78½¢; No. 2 mixed, 78¢; No. 2 white, 78½¢.

Oats—No. 1 white, 51¢; No. 2 white, 50½¢; No. 3 white, 49¢@49½¢; No. 4 white, 47¢@47½¢; ordinary white clipped, 52¢; 52½¢; fancy white clipped, 53¢@53½¢; No. 1 f. \$1.59; barley—C i f, malt-ing, 79¢@86¢; feeding 69¢@75¢.

Beef Sheep & Hogs
Cattle—Receipts, 4270; steers, \$7.50@9.85; bulls, \$4.50@6.35; cows, \$1.75@6.50.

Hogs—Receipts, 7400; steady: veals, \$6@6.75; 100-lb. hogs, \$5.60@6.10; medium, \$5.60@6.10.

Sheep and Lambs—Receipts, 4835; steady: sheep, ewes, \$4@6; culls, \$6.50@7; 100-lb. hogs, \$5.60@6.10; medium, \$5.60@6.10; heavy hogs, \$10.50; roughs, \$8@8.50.

PHILADELPHIA DAIRY MARKET
—April 2, 1921.

Butter—Receipts, 1154 tubs. Supplies of fine goods were well cleaned up and the market ruled firm and higher. Quotations: Solid-packed creamery, fancy high-scored, 51¢@52½¢; do good to choice, 49¢@51¢; do local, 50¢@51¢; extra firsts, 43¢@49½¢; firsts, 44¢@48¢; seconds, 38¢@42¢; do local, 50¢@51¢; do common, 38¢@42¢; fancy, 52¢@54½¢; fair to good, 41¢@51½¢; ladies packed, as to quality, 22¢@24¢; packing stock, 16¢@20¢; family brands of nearby prints were jobbing at 61¢@62¢, and fair to choice, 51¢@60¢.

Cheese—Dull and without important change. Quotations: New England whole milk fats, fancy held, 24¢@29¢; do fair to good held, 24¢@27¢; do fancy fresh, 23¢@24¢; do medium, 22¢@23¢; do fresh, 22¢@23¢; Longhorns held, 20½¢; fair fresh, 22¢@23¢; single dairies held, 27½¢@28½¢; do fresh, 23½¢@24½¢; jobbing sales of fancy held goods, 30¢@31¢.

Hogs—Trade was slow and the market was weak and easier, due to heaviest outside advances and more liberal offerings. We quote: Best western, \$12.50@13; nearby good, \$11@11.75.

City Dressed Stock—Steers, heifers and cows ruled steady, with moderate supplies, but trade was quiet. Lamb of desirable quality was in fair request and steady. Mutton was dull and easier, with supplies in excess of requirements. Other kinds were quiet and without important change. We quote: Steers, 15¢@20¢; heifers, 12¢@14¢; cows, 12¢@14¢; calves, city dressed, choice, 24¢@25¢; country dressed, 20¢@21¢; lambs, 24¢@25¢; common, \$5@5.50; hot house per head, \$6@10.

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After that meeting of the sewing circle at Mrs. Brown's no less than twenty members bought Andes Furnaces



"My sakes, Mrs. Brown, it's nice and warm in here—our house is like an iceberg!"

and were shivering in sweaters and coats, hoping it would be warm again soon, so they wouldn't have to start up their fires again.

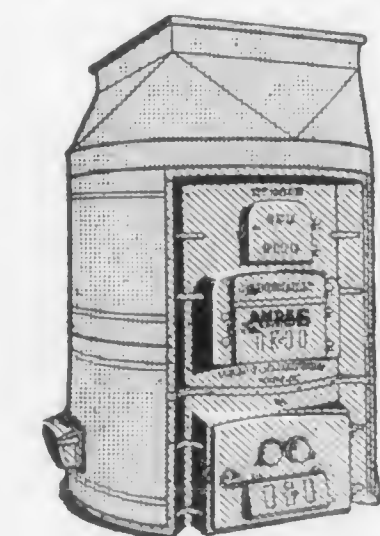
But down at Mrs. Brown's house it was as cozy and warm as could be. It pleased Mrs. Brown a great deal because every member who came remarked on how comfortable it was, and they used practically the same words. They would say, "My sakes, Mrs. Brown, it's nice and warm in here—our house is like an iceberg!"

It pleased Mrs. Brown so much, that later in the afternoon she said, "Ladies, every one of you has said how nice and warm the house is—it's that new Andes Furnace, it's wonderful. I built that fire myself this forenoon—just a little fire. And inside of half an hour it took the chill off the house. But I think the best part of it all is that it kept us warmer this



winter and cost us less than ever before. And it's so nice this time of year to have a little fire in the morning or at night to take the chill off the house."

"Do you mean," someone asked, "that this house has been as warm and comfortable as this all winter long?"

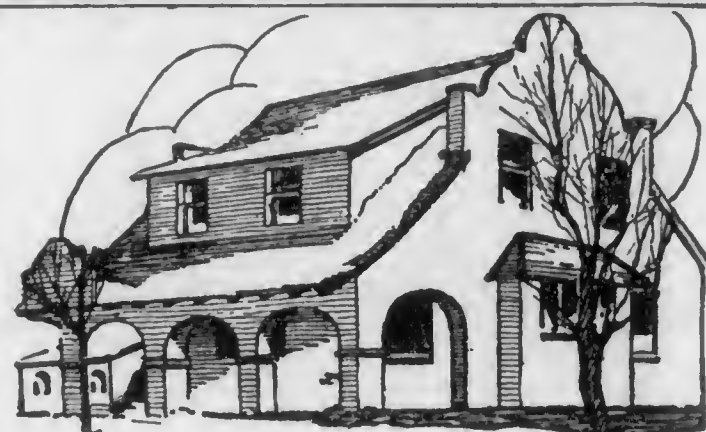


Gives heat like warm, summer sunshine.

"Yes, all winter long," said Mrs. Brown, "even on the very coldest nights. The house hasn't been cold once. And it really has saved us money, too—not a fortune, of course, but it's saved us enough to be really worth while."

ANDES
SYSTEM
ONE PIPE FURNACE
"Better Heating for Less Money"

"Well, I'd like to know how to get one," someone else said, "because I've made up my mind that I will not go through another winter with the house as cold and uncomfortable as it has been this winter. I simply can't stand it."

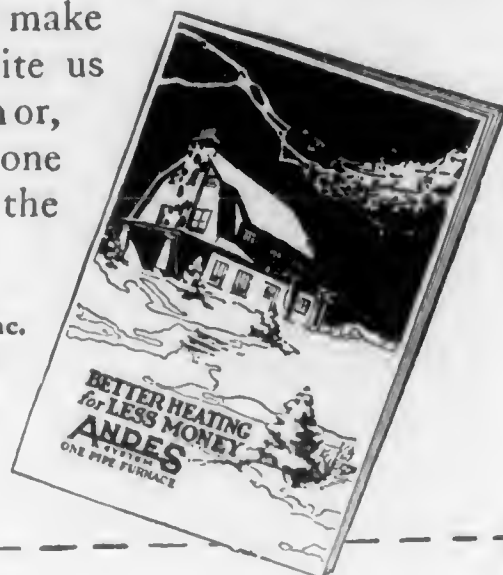


"Then this is just the time to have an Andes put in. That's another fine thing about it. It can be put in complete in one day with no confusion or expense of cutting open the floors and walls to put in heating pipes. And just at this time of the year, you can get a special discount, if enough of you buy them at the same time. If they ship a whole carload to town, I think they told me it was twenty furnaces, they can afford to give this discount, but only in April and May. If you want me to, I'll write to them tonight and get each of you a copy of their book, 'Better Heating for Less Money' and full details about the carload plan and the discount."

And that's how it happened that twenty members of the Sewing Circle bought Andes furnaces. People are writing to us all the time about the Andes. Here is what Mr. S. Weiss of Reading, Pa., says: "Gentlemen—Your Andes One Pipe Furnaces have certainly done the trick. I used six of them this winter and our tenants are more than pleased."

The Andes is guaranteed to give perfect satisfaction or it will be taken out and the full purchase price returned to you.

Why not get ready now to make next winter comfortable? Write us today about the car load plan or, if you prefer, about just one furnace for yourself. Use the coupon below.



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Makers of the famous
Andes Stoves and Ranges

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Dept. P Geneva, N. Y.
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AGRICULTURE
THE KEYSTONE OF
NATIONAL PROSPERITY

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Two Essentials in Potato Growing

Good Seed and Thoro Spraying Are Necessary for Best Results

By P. L. EDINGER

THE remarkable value of good seed and thoro spraying was strikingly and convincingly shown last fall when a farmers' demonstration field meeting was held on the Niesley Brothers farm near Churchtown, Cumberland County, Pa., under the direction of the local Farm Bureau, at which time results were secured on the relative values of good seed (i. e. disease-free) versus diseased seed (i. e. field-run) and also on spraying versus no spraying.

A difference of 117 bushels of potatoes per acre due exclusively to the use of disease-free seed was one of the striking facts brought out at the time of the field meeting, whereas the difference in yields of thoro sprayed versus unsprayed potatoes amounted to the rather remarkable figure of 117.2 bushels per acre. In other words, due only to the two factors—superior seed and thoro spraying—an increase of 234.2 bushels of potatoes per acre was made.

The idea in the minds of the Niesley Brothers at the time of planting was two-fold, namely, to demonstrate to the community that it pays to use good seed, and secondly, to determine the best source of good seed.

Seed-Source Test

With these ideas in mind a portion of the five-acre field in question was planted to local seed (which during the growing season was found to contain 40 per cent of the disease known as leaf-roll); a portion to good seed (that is, seed selected by the Extension Plant Pathologist of State College because of its freedom from disease) from Michigan; another portion to rogued seed (that is, seed from a field from which disease plants were removed) from Cambria County, Pa., and a fourth portion to rogued seed from Lehigh County, Pa. In all cases the seed used was of the same variety—the Rural (Bessett), so that the basis for comparison was uniform.

The following summary gives the yields of the different seed sources and the contrast with the local seed.

	Per acre
Yield of sprayed Lehigh Co. seed	450.2 bus.
Yield of sprayed Michigan seed	429.4 bus.
Yield of sprayed Cambria Co. seed	425.5 bus.
Average yield of three sources of disease-free seed—438.4 bushels per acre.	
Yield of local seed (field-run)—333.2 bushels per acre.	
Average difference due to superior seed—105.2 bushels per acre.	
Greatest difference due to superior seed—117 bushels per acre.	

The reason for the great difference is readily seen from the following figures taken from 50 hills of potatoes infected with leaf-roll—as found in the local seed—as compared with 50 hills of disease-free potatoes.

Fifty hills potatoes infected with leaf-roll—47 pounds tubers; fifty hills potatoes disease-free—129 lbs. tubers.

One of the accompanying cuts shows the relative yield of leaf-roll versus no leaf-roll of the 50 hills each.

Thoro Spraying

Because of the fact that late blight was severe in this section of the state this year the results of thoro spraying were equally as striking as those above mentioned. Six applications of home-mixed Bordeaux were made during the growing season the spraying being done with a power potato sprayer, with triple-action pump having two nozzles per row, spraying eight rows per round under a pressure of 200 pounds. Sprays were applied in general about every ten days, altho frequency of application was influenced to some extent by the rapidity of vine growth.

To determine the value of spray-

ing in its influence on yield a check of 4 rows—unsprayed thruout the season was left. At the time of the field meeting, data was secured on spraying versus no spraying and the following figures are evidences of the value of spraying in a year when late blight is so prevalent as it was in 1920.

	Per acre
Yield from Lehigh Co. seed, sprayed	450.2 bus.
Yield from Lehigh Co. seed, unsprayed	333.0 bus.
Difference due to proper spraying	117.2 bus.

Economy of Spraying

The important thing, after all, about spraying is, does it pay? A summary of the economy of the spraying done on the Niesley Bros. farm follows:

	Per acre cost
(Six applications) 50 lbs. lime @ 1c	.50
50 lbs. bluestone @ 10c	5.00
Depreciation on sprayer (\$213.75) @ 15%	6.41



Showing Contrast Between the Yields of Fifty Hills of Potatoes Infected With Leaf-roll and Fifty Hills of Disease-free Seed

Interest on sprayer at 6%	2.56
Man and horse labor	7.50
	\$21.97
Bush.	
Increase in yield per acre due to spraying	117.2
Value of increase @ \$1.00 per bushel	\$117.20
Cost of spraying per acre	\$21.97

Net profit per acre	\$95.23
Total net profit on 5 acres	\$476.15
Summary of results secured from good seed and proper spraying:	
Increase per acre due to good seed	117 bus.
Increase per acre due to spraying	117.2 bus.
Total increase due to these two essentials (per acre)	234.2 bus.
Probable yield had these two factors been omitted in 1920 (per acre)	216.0 bus.

NEW YORK POTATO MEN MEET

Members of the New York State Potato Growers' Association in their annual meeting at Ithaca, N. Y., decided to put the marketing of certified seed on a better business basis, and as a means of bringing this about resolved to incorporate un-

der Article 13-A of the membership co-operative law of New York State. The incorporation will be made effective for the sale of certified seed.

The five new directors who were elected to proceed with the incorporation, drew up and submitted to the association a set of by-laws adapted to the new business of the association. When the incorporation has been completed it will be the duty of these directors to elect officers and to employ a manager and sales agent to push the sale of seed stock, and it was planned to put a man in the field in time to handle the seed for this spring's planting.

Tighten Up Seed Requirements

The requirements for seed certification were made considerably more rigid. With respect to leaf-roll and mosaic the new provisions require roguing of the fields before the first inspection. Notice will be given the grower one week prior to the visit of the inspector. No changes were made with respect to grading and bagging requirements. Several changes were made, however, in the regulations covering the disqualification of fields, among which were the following:

The presence of 5 per cent of mosaic at first inspection or of more than 5 per cent at the second inspection will disqualify a field. The presence of more than 2 per cent of any of the following diseases or more than 4 per cent in all will disqualify; wilt, black leg, leaf-roll, early dwarf or hills weak from other causes. The same percentages govern at the second inspection. In regard to varietal mixture, only 3 per cent will now be tolerated at the first inspection and 0.5 per cent at the second inspection. The requirements in regard to other diseases, type, size of seed, etc., were generally tightened up.

Dr. F. C. Stewart told growers that in an experiment last season with 1000 small and 1000 large potatoes to determine their comparative worth as seed, he had obtained slightly better results in every respect with the small tubers. Enormous No. 9 was the variety used, and the results showed that when seed potatoes are grown in special seed plots with all weak and diseased plants removed, all of the potatoes grown may be used regardless of size. Small potatoes, however, should not be used for planting the seed plot. When seed is scarce and high in price and small potatoes can be obtained from high yielding fields, free from leaf-roll, mosaic and wilt, it is often advisable to use them rather than the more expensive large potatoes, said Dr. Stewart.

In these tests the large and small potatoes were planted in alternate rows of 100 potatoes each, the small ones being planted whole and the large ones divided into three parts. Of the rows of large potatoes one-third of them were planted to butt-end pieces, one-third to middle seed pieces and one-third to stem-end pieces.

Both the large and the small potatoes made nearly a full stand, but the smaller tubers came up a little sooner and yielded a slightly larger crop, the yields per acre being 530 bushels for the small whole potatoes and 514 for the large ones.

According to Daniel Dean of Nichols, N. Y., one of New York's best known potato growers, more money has been lost from lack of information as to size, movement and consumption of the potato crop than from the competition of Danish potatoes. Too much talk about the big crop is what brought down prices, and as a matter of fact there is really a shortage. On January 1, of this year, the supply was 145,000,000 bushels. Last year at the same time there were 127,000,000 bushels but the supply was practically exhausted by April and the prices rose to the highest level ever known. This year's supply is 30 million bushels less than two years ago.—H. T. B., New York.



The Yield from One Row of Unsprayed Potatoes on the Left which was 13 Bushels, as Compared to the Yield of One Sprayed Row on the Right—18 Bushels—a Difference of 5 Bushels Per Row

Soils and Fertilizers

Conducted by Dr. J. G. Lipman

Our readers are invited to send us their problems on soils and fertilizers and they will be answered by Dr. Lipman in this column.

DECREASING AND INCREASING CROP YIELDS

IN NEWLY settled agricultural sections the methods of farming are usually extensive. The farmer tries to make man, animal or mechanical power as efficient as possible. Very often single cropping is followed under such conditions. Cash crops, like cotton, tobacco, corn, wheat, flax, potatoes or beets, are grown year after year until they cease to be profitable. As the yields begin to decrease diversification becomes desirable and often necessary and the cropping systems become modified to a more or less far-reaching extent. Examples of relatively high yields from virgin soils followed by gradually decreasing yields may be cited from our cotton belt, corn belt, wheat belt, etc.

In the course of time the decrease in the yields per acre is arrested and production assumes an upward trend. Instances of this sort are readily found in the eastern states or even in the great agricultural states of the Middle West. Even more striking are the curves of increased crop yields in certain of the European countries. Splendid examples of this sort are found in Denmark and in Germany. In the latter country the cultivated acreage was about the same in 1914 as it was in 1889. The number of persons engaged in farming also remained stationary. On the other hand, the production per acre increased to such an extent within this period as to have enabled the same number of farmers, cultivating the same number of acres, to feed 67 million people in 1914 as against 47 million people in 1889. Within the same period there was also a remarkable increase in the number of cattle and particularly of swine in the country. In other words, more human food as well as more animal food was being produced from the same area. Indeed, the yields per acre of rye, wheat, barley, potatoes and sugar beets practically doubled within that period.

There is scarcely room for difference of opinion as to the fact that, under modern conditions, agricultural practices in the older regions become more intensive. Certain factors contribute toward the increasing yields. Single cropping gives way to crop rotations whereby soil fertility is maintained more effectively and injuries from insects and fungous diseases diminished. Live stock becomes a more effective aid in helping to maintain the soil productivity. Methods for destroying noxious insects and weeds and of combating fungous diseases are sought out and applied. Fertilizers and green manures are used more frequently. The plowed depth of the soil is gradually increased, its water-holding capacity extended and the feeding area of plant roots made much greater.

In dealing with increasing production per acre consideration must, of course, be given to the question of cost. The largest yields are not necessarily the most profitable yields. For example, it has been shown time and again, both in this country and abroad, that by top-dressing wheat early in the spring with nitrate of soda at the rate of 100 pounds per acre the yield may be increased by five or six bushels per acre. Now, if 100 pounds of nitrate of soda cost \$5.00 and wheat is selling at \$1.00 a bushel, the increase in question would not be very profitable. The farmer might obtain better returns in that case from a 20-bushel crop than he would from a 25-bushel crop. On the other hand, if nitrate of soda costs \$3.00 per 100 pounds and wheat is selling at \$2.00 per bushel, the use of the nitrate would, under average conditions, be quite profitable. Hence, when extensive versus intensive methods of soil treatment are compared, due attention should be paid to the cost involved in securing the larger yields. The cost of labor and fertilizer on

the one hand and the prices brought by the crop on the other must determine the point at which yields per acre are likely to be most profitable. It happens that in the agricultural development of the United States cheap land, high-priced labor and the need for making the latter most efficient have determined acre yields. For different sections of the wheat area the 15-bushel crop has in past years been more profitable than would have been a 20-bushel crop, since the increase would have meant excessive labor and fertilizer costs.

It is evident, in view of what has been said above, that the cost of labor, the efficiency of labor, the cost of plant-food and the price which the crop finally brings all serve to determine to what extent cropping may be more or less extensive or more or less intensive. As our cities develop, as the drift cityward increases, as consumption tends to outrun production, the cost of food—which means the selling price of the crops must of necessity increase. This in turn is bound to lead to more intensive methods of soil tillage, to the use of more fertilizer per acre, to the selection of higher producing strains and to other practices which would stress more efficient use of land rather than more efficient use of labor. However, from the standpoint of national economy and from the standpoint of the consumer, with whom the farmer has a community of interest, increased yields per acre should be achieved without, if possible, increasing the unit cost of food. Can this be done?

Contrary to prevailing opinion, large-scale production and large yields per acre are not neces-



Mixing Fertilizer at the Plant of Chamberlain and Barclay, Cranbury, Station, New Jersey

sarily antagonistic. Sufficient progress has been made in the development of mechanical power to show that deep and thoro tillage may be achieved at a relatively low cost. There is every reason to believe that the tractor and other tillage machinery driven by mechanical power are still in an early stage of evolution. The next decade should make mechanical power a much cheaper and much more effective means for creating a good seed bed at a low cost. The development of new forms of fertilizer, their greater concentration and their greater solubility mean a lower unit cost of plant-food. Plant breeding and selection will give us better and better types of crops and varieties best suited for any particular soil or climatic conditions. Specialization in cropping must also lead to the more efficient use of the land, of plant-food and of labor. The trend, at any rate, is certain to be in the direction of larger yields per acre and, for the sake of the consumer as well as for the sake of the producer, we may entertain the hope that increased production will be accomplished without a corresponding increase in the unit cost of human food.—J. G. Lipman.

A HAND-MIXING FERTILIZER PLANT

By A. W. Blair

The accompanying photograph shows a part of the fertilizer mixing plant of Chamberlain and Barclay, Cranbury Station, N. J. Cranbury Station is located in the center of a splendid farm-

ing section of the state, much of which is devoted to the growing of potatoes. A large area of the soil is the well known sassafras loam which is found in rather large areas in Middlesex, Mercer, Monmouth, Burlington, Camden, Gloucester and Salem Counties.

Potato growers in this vicinity have learned the value of high-grade fertilizers, and many are using as much as a ton per acre. The demand for home-mixed goods has become so great that this firm which began a few years ago by mixing 10 tons, now handles something like 5,000 tons a year in the Cranbury plant and 1000 tons at the Jamesburg plant. The raw materials are purchased in carlots and brought to the plant on a railroad siding which runs along one side of the big building.

Nitrogen is supplied in the form of nitrate of soda, ammonium sulphate, dried blood, and tankage, about half coming from the mineral materials and half from the organic materials. Sixteen per cent acid phosphate supplies the phosphoric acid and the potash is supplied in the form of German muriate. No filler is used, the organic nitrogenous materials being introduced in proper proportions to bring the mixture up to one ton. The exact amount of these materials to be used will vary somewhat depending upon the analysis of the blood and tankage.

The popular formula for potatoes in this section is the 4-8-6 mixture, that is, four per cent ammonia, 8 per cent phosphoric acid, and 6 per cent potash. The writer had the privilege of going thru this plant but did not make inquiry as to the exact proportions in which the raw materials are used to make this mixture.

He would suggest that a 4-8-6 fertilizer could be made by combining the materials mentioned in the table at the foot of this column.

By taking all the nitrogen from nitrate of soda and ammonium sulphate, half and half, it would make a fertilizer having the same analysis as above but requiring a total of only 1610 pounds instead of one ton. For such a mixture there would be required 210 pounds of nitrate of soda, 160 pounds ammonium sulphate, 1000 pounds acid phosphate, and 240 pounds muriate of potash. Such a fertilizer would have practically the same amount of available plant food as is contained in a ton of the other mixture, would be more effective in crop production, would be cheaper than a fertilizer containing organic nitrogenous materials, and would save the handling of 390 pounds of material in every ton. It would, however, have one serious disadvantage. If left standing in bags for some time after being mixed it would tend to become hard and would require more or less pulverizing before it could be put thru the drill. If it could be applied very soon after being prepared it would be an ideal mixture and could be used at a considerable saving over the other mixture. It yet remains for someone to find a cheap material which can be used as a "conditioner" in such a fertilizer so that it will not be necessary for the farmer to pay an

(Continued to Page 24.)

Table Showing Ingredients for a 4-8-6 Mixture

	Raw Materials.	Ammonia.	Phos. Acid.	Potash.
	Lbs.	P. C.	P. C.	P. C.
Nitrate of Soda	85	19	..	..
Ammonium Sulphate	65	25	..	..
Dried Blood	90	18	..	..
Tankage	520	6	..	..
Acid Phosphate	1000	..	16	..
Muriate of potash	240	..	..	50

One ton of this mixture would contain 79.8 pounds of ammonia, 160 pounds of phosphoric acid, and 120 pounds of potash. Reducing this all to a basis of 100 we would find that we had a mixture containing 3.99 pounds of ammonia, 8 pounds of phosphoric acid, and 6 pounds of potash per 100 pounds, or as it would ordinarily be spoken of, a 4-8-6 mixture.

The tankage would carry considerable slowly available phosphoric acid which has not been included in the above statement.

FARQUHAR

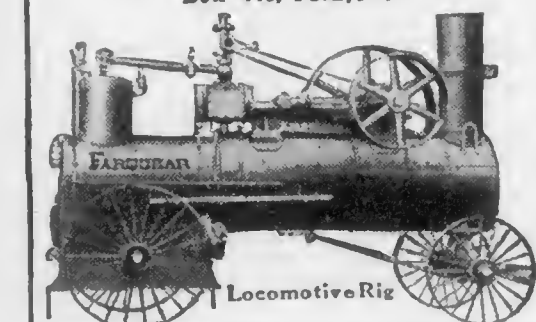


Above is a Farquhar Cornish or "Slab Burner," the economical outfit for driving sawmills. Aneasy steamer, producing dependable power from oil, kerosene and sawdust.

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POULTRY

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THE small portable colony house is an important part of the farm poultry equipment. We find colony houses necessary as brooder houses for the young stock. After the brooders are removed the small houses will protect the young stock until they are sold as broilers, or breeders or placed in the laying houses for the winter. Colony houses can be made to exclude rats and so they are useful as places for setting hens. If there is more corn than the regular storage capacity of the farm can protect, we have found colony houses very useful as corn cribs. By springing enough of the corn is used so the houses are ready to go back to their primary use as brooder houses.

The advantage of the colony house rests mainly on the chance of raising young poultry on clean ground. We find that it is easier to produce healthy poultry when they can range on soil that is not used every year for poultry production. The small colony houses can be moved two or three times during the growing season and each new location will provide an abundance of bugs and green food that possibly had become rather scarce on the old range.

There are three sizes of shed-roof colony houses which are useful. The first is 6 feet wide and 8 feet deep. It can be built on two runners so it can easily be pulled around the farm with one horse. The runners can be made by nailing two planks together. The planks should be each 2 inches wide and 10 feet long and beveled. Two-inch holes can be bored in each end of each runner. These are useful in attaching a rope or chain to pull them around. The frame for the floor will of course fit into these two runners. The door can be at one side of the front and the remaining space devoted to a glass window and an open front space protected with a muslin curtain.

When storms make it necessary to close the window the cloth front will provide plenty of ventilation. Such a house can be built of scrap from other buildings but better results will be obtained from using good grade lumber as the houses have to be moved and must be strong enough so they will not become rickety.

The next larger type we have found of great value for housing coal burning brooder stoves. They are 8 feet deep and 10 feet wide. If not built on skids they can be blocked up on cement blocks to keep out rats and weasels. Such houses are quite warm when covered with roofing paper on the top and on all sides. Strips can be used to hold the paper on. The strips can be painted to give the houses a neater appearance.

The largest type of colony house which we would use is 10 by 12 feet of the shed-roof type. Such a house is useful for brooder stoves and furnishes plenty of roosting space for a good-sized growing flock. But the large colony houses are heavy to move and usually it is hard enough to find time to move houses without the job being any heavier than necessary. Some breeders have placed hubs on the sides of these large houses. Then they have wheels to fit the hubs. The houses are slight-

ly raised and the wheels fastened on and then the house is easily moved on any ordinary soil which is dry enough for a poultry range.

It pays to have colony houses as uniform in construction and appearance as is possible. This adds to the appearance of the poultry farm and must be of some benefit in making sales as the quality of a farmer's breeding stock is sometimes judged by the appearance of the buildings. Of course that is a poor way to judge breeding stock but still the good-looking place has an appeal for customers which should not be disregarded by the owner.

Colony houses can be built during the winter before the rush of farm work. In the spring there is seldom time for such work unless it is done by hired labor. Even an unskilled carpenter can turn out very good-looking colony houses if willing to work slowly according to plans and be careful to build a good square and strong frame. Most of the experiment stations in poultry sections have useful bulletins describing colony houses which have been found practical on their farms. Now that lumber is lower it will pay to look over these bulletins and invest enough to build at least two or three substantial colony houses. If given proper care they will last for an indefinite time and make poultry raising easier and more profitable.—R. G. Kirby.

HENS NEED PROTEIN

I have about forty-five hens of different breeds which I have been giving the best of care but which do not lay as they should. Some of them are of the 1920 hatch and are not laying yet. They seem to be healthy and free from lice. The poultry house is near the piggery. Do you think that has anything to do with their not laying?—Mrs. D. M. M., Kent Co. Del.

Pullets hatched in June need about eight months for maturity if they are of the heavy breeds. Leghorns need about six months. Sometimes the late hatched stock take longer to mature than earlier birds because the early hatched chicks enjoy fine growing conditions in the spring and late in the summer the green food is tougher and the bugs and worms more scarce. Possibly your pullets are laying by this time.

Hens need plenty of sour milk or beef scrap in the ration if they lay during the winter. Instead of the bran and poultry powder in the morning keep a dry mash before them in a hopper. It can consist of 50 lbs. wheat bran, 100 lbs. ground oats and 20 lbs. beef scrap. If you do not wish to mix the mash you can buy commercial laying mash which are very satisfactory and economical to use.

In the morning the birds need a scratch grain in deep litter to make them exercise. An easily mixed ration consists of 200 lbs. corn and 100 lbs. wheat. The position of the poultry house near the piggery should not be a serious detriment if other conditions are all right.—R. G. K.

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Reports on the March Freeze

Further Information About Damage Done in Various Counties

PENNSYLVANIA

Luzerne Co., Pa.—Peaches, plums and cherries suffered most from freezing—early varieties of apples to some extent. Cannot give fair estimate for several days but would guess roughly that fruit damage in county amounts to \$200,000. Early cabbage damaged to some extent but not seriously. Wheat froze in many places but think it will grow out fairly well.—H. N. Cobb, Co. Agent.

Adams Co., Pa.—Peaches, practically all killed. Early varieties of apples practically ruined as it looks at present. Later varieties entirely gone in some sections. Some few orchards examined have some hopes for a part crop but no percentage guess can be made. Cherries and plums gone.—Paul Hoffman, Co. Agent.

Delaware Co., Pa.—The loss in this county is as follows: Apples, 100 per cent; peaches, not less than 90 per cent; plums hardly domestic species, negligible; plums, hybrid and imported species, 100 per cent; sour cherries, 95 per cent; sweet cherries, no information. Small fruits so far as I know were not damaged. I was very much surprised to see the extent of injury in apples. An agent for spray machines, who was in York County on Tuesday, reported that late apples there had not been injured, and I do not know what condition ours were in as a result of Monday night's freezing but I do know that practically none of them were alive Wednesday afternoon. It is a question which night did the worst damage. There seems to be no difference in injury between early and late varieties. In the case of peaches, there is some difference. The blossoms killed were completely open will be almost entirely lost. Those that were showing pink are between 10 and 20 per cent alive. If curculio and brown rot do not get the remainder, a man with 10 or 15 acres of orchard may get enough fruit for use of his own family.—D. Watson Atkinson, Co. Agent.

Butler Co., Pa.—All early plums and early cherries killed. All pears and peaches killed where buds had opened. Two early for definite damage estimate. Late blossoming varieties of pears and peaches are likely safe. Heaviest damage occurred on western slopes.—R. C. Wiggins, Co. Agent.

Dauphin Co., Pa.—My investigation in this county has shown that practically all the early fruits have been destroyed by the recent cold weather. This includes peaches, pears, plums, apricots and cherries. Because of the large number of buds on the various trees it is quite likely that some have escaped. Our growers still hope for some relief but feel certain that most all the early fruit has been destroyed. Later reports show apples more seriously damaged than was at first thought.—H. G. Niesley, Co. Agent.

Westmoreland Co., Pa.—My observation of the effect of the recent frost on fruit has been as follows: Early plums, 100 per cent loss; early peaches, 100 per cent loss; early pears, 100 per cent loss; late peaches, 50 per cent loss; early cherries, 100 per cent loss; late cherries, 40 to 50 per cent loss; early apples, 90 per cent loss; fall and winter apples—normal crop.—W. L. Treager, Co. Agent.

Somerset Co., Pa.—Apples, no damage; peaches, 50 per cent damaged; pears, 90 per cent; sweet cherries, 100 per cent; plums, 75 per cent; no damage to sour cherries.—C. C. McDowell, Co. Agent.

Bucks Co., Pa.—I think that the damage is over-estimated for this county. The peaches already in blossom are damaged entirely but those not yet open are O. K. Not 50 per cent are frozen. The cherry and plum crop is damaged more than peaches.—N. E. Garber, Co. Agent.

Clearfield Co., Pa.—According to reports that I have been able to obtain, I find that practically all of the peaches, pears and plums in this county have been killed by the late frost. The apples have not been hurt.—W. C. Sterrett, Co. Agent.

Montgomery Co., Pa.—The peach

and plum crop is almost a total loss due to the late freeze. A number of our largest growers have about concluded that the apple crop is also seriously damaged.—A. K. Rothenberger, Co. Agent.

Susquehanna Co., Pa.—No damage to apples because buds are not far enough advanced. No peaches raised commercially and doubt if even the few on general farms are hurt.—Chas. P. Pague, Co. Agent.

Northumberland Co., Pa.—Estimate of damage in this county: Peaches, \$50,000; plums, \$10,000; cherries, \$10,000; apples, \$20,000.—J. M. Fry, Co. Agent.

Schuylkill Co., Pa.—Early cherries, 80 per cent of buds killed; late cherries, 50 per cent; peaches, 70 per cent; apples, 45 per cent; pears, 55 per cent; plums, 80 per cent.—W. L. Bollinger, Co. Agent.

Clarion Co., Pa.—The recent freeze has done little, if any damage in this county. I have examined some of the plum buds which are coming in blossom and find that the outer petals are delicate color but that the fruit germ is uninjured. I cannot say at the present time what the injury will be from the present cold spell which we are going thru. There is snow on the ground and the ground was frozen last night.—Ernest E. Fish, Co. Agent.

Elber Co., Pa.—The farms I have visited since the late freeze, I have found very little damage caused by it. The early sweet cherries will have a small percentage of buds killed. The grapes, peaches and apples, as far as I can find, have not been hurt at all.—R. H. Engle, Co. Agent.

Washington Co., Pa.—We have not made an extensive examination but fear the damage to our fruit has been very severe. Some varieties of apples over 75 per cent and peach a higher loss than that. I cannot say whether general farm products are damaged. The alfalfa is damaged so as to affect the first crop materially, probably resulting in 25 per cent to 50 per cent yield.—J. M. McKee, Co. Agent.

Carbon Co., Pa.—Damage slight in peaches, pears, apples.—Nicholas M. Rahn, Co. Agent.

Chester Co., Pa.—The damage in Chester County was largely on the peach crop to the extent of about 75 per cent. Wheat had a little setback in the northern part of the county.—Wm. Vandegrift, Co. Agent.

Greene Co., Pa.—Cherries, early, 100 per cent damage; cherries, late, 50 per cent; plums, 75 per cent; pears, 50 per cent; apples, 25 per cent; new seeded clover, 25 per cent; peaches, 75 per cent.—L. F. Engle, Co. Agent.

Blair Co., Pa.—Apples, practically none; peaches, probably 30 to 40 per cent; plums, fully 30 to 40 per cent.—R. B. Dunlap, Co. Agent.

Center Co., Pa.—Apples, little or no damage; peaches, 75 per cent loss; cherries, 75 per cent; plums, 65 per cent. These are merely estimates without a careful survey.—J. N. Robinson, Co. Agent.

Potter Co., Pa.—I would estimate the damage done to the hay crop in the county will be about \$54,000. This is figured on the basis that the yield will be decreased approximately one-half ton to the acre, which would be quite conservative due to the fact that the grass and clover had started to grow and they were very badly frozen back. The damage done to the wheat crop would be very small due to the fact that we have a very small wheat crop in the county. Considerable damage was done to the apple crop but an estimate would be impracticable because the buds have started very little yet.—Bert Straw, Co. Agent.

Mifflin Co., Pa.—Each crop practically a total loss. Plums and cherries total loss. Apples, cannot tell just yet. Wheat and clover frozen but I do not believe there is any permanent damage.—J. C. Thompson, Co. Agent.

Warren Co., Pa.—Wheat doesn't seem to be affected. Clover, will stunt development for a while. Apples, had big crop last year, seemed to be very (Continued to Page 10).

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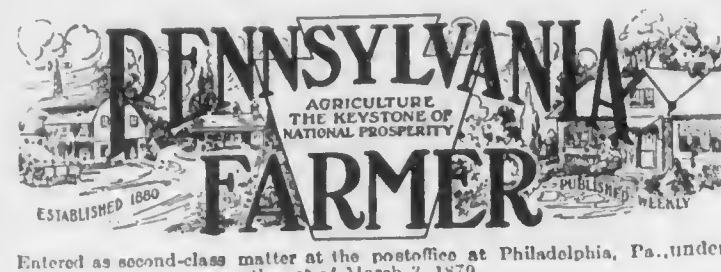
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PHILADELPHIA, PA., APRIL 16, 1921.

VOLUME 19 NUMBER 16

OUR JOB is to serve our readers. Whenever you are puzzled, write to us and we will help you if we can.
—The Editors

Does it seem an idle thing,
A pleasant word to speak?
The face you wear, the thought you bring,
A heart may heal or break.
—Whittier

Don't Be Side-Track

FARMERS AND OTHERS interested in the establishment of a state fair in Pennsylvania should not be fooled into accepting a compromise by agreeing to a plan to change the bill which would establish a fair into one creating a commission to investigate the subject. The latter would do nothing but spend a few thousand dollars in a useless investigation and at the end of two years we would be not a whit farther on than we are now. Pennsylvania is now 70 years behind her sister states in this matter and we cannot afford to drag along still farther behind because a few people object from selfish reasons.

Watch Your Fires

OWING TO the absence of the usual amount of snow and spring rains fires spread in field and forest with greater ease than common this year. Already, thousands of acres have been burned over this spring, and the favorable conditions will exist for several weeks yet. It is the duty of every one to be extremely careful with even the smallest fire to see that no possible chance for it to spread exists. Almost all fires of this kind start as the result of criminal carelessness on the part of some one. The burning of trash and brush heaps, even in the midst of a field, is a very usual cause of extensive fires. Work of this kind should be done on a still day or when the dead grass is wet so that the fire can be controlled. The need of reforestation is so great and the annual destruction by fire so large that it will be necessary to pass laws to punish carelessness with the same severity as maliciousness is punished unless the waste can be stopped by the exercise of common, patriotic care.

Big Wheat Crop Forecast

THE APRIL estimate of the Department of Agriculture on the 1921 winter wheat crop shows a prospect of 621,000,000 bushels. This is an increase of 44,000,000 bushels over the crop of 1920. The average condition is 91 per cent of normal as against 75.6 per cent last year and 83.6 per cent, the ten-year average. While the estimated crop for this year is still nearly 100,000,000 bushels short of the 1919 crop, it must be remembered that there is an unusually large hold-over from last year on hand, and also the export demand two years ago was abnormal. If

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the estimated crop comes to maturity, this amount added to the present surplus will make an amount of wheat so much larger than will be needed for home consumption that it is difficult to see how embargoes or high tariffs will greatly benefit the wheat grower. What is much more needed from statesmen is an honest, intelligent effort to help solve international difficulties so that this country can take its proper place in international trade.

Why The Inconsistency?

WHILE PENNSYLVANIA FARMER has never advocated the policy of concerted action to reduce production, chiefly because we believe it to be unsound economically and impossible of operation, yet we have no sympathy with that class of people and papers who cry "unpatriotic" at the people who do advise a reduction of volume. It is generally conceded that individuals or firms are acting rightly and sensibly in closing their factories when they have produced more than the market will absorb. People will tramp the streets, out of work, and hold no grudge against those who close their factories under such circumstances, and the city papers will print news of the closing simply as matter of general interest. But let it be known that a farmer or an organization has proposed that farmers reduce their production because there is more than the market can take and production is being carried on at a loss, and a mighty howl goes up from the city people and the city press. Where is the difference? Why is one more unpatriotic than the other, because he tries to avoid conducting his business at a loss? This inconsistency in sane people can arise from nothing else than an ignorant assumption that it costs nothing to produce food. Where does the fault for this state of ignorance lie? Will city people voluntarily inform themselves, or is it the duty of the farmer organizations to map out a campaign of education which will enlighten consumers on the economics of agriculture?

Price Changes

WHOLESALE price levels now correspond 40 those of March 1917, having dropped 38 1/2 per cent since the peak of last May. It is, however, 67 per cent higher than in 1914. This drop is indicated in government figures which disclosed the fact that recessions have been very uneven, with farm products only 29 per cent higher than in 1913 and building materials 122 per cent. Based on the index number of 100 for 1913 the following table shows the recessions since last May:

	May 1920	Feb. 1921	% Decline from May, 1920
Farm products	244	129	47
Food, etc.	287	150	48
Cloth and clothing	347	198	43
Fuel and lighting	235	218	7
Metals	193	146	24
Building materials	341	222	34
Chemicals and drugs	215	178	17
House furnishings	330	277	16
Miscellaneous	246	180	27
All commodities	272	167	38.5

It is interesting to note that farm operating equipment prices at their peak were only 73 per cent above the 1914 figure, and that during the last few weeks there have been many substantial reductions from that point.

Gratuitous Advice

THE MAGAZINE called "Industry," published at Washington, from which we published an editorial extract a few weeks ago in which an attack was made upon the Farm Bureau movement, has again come out with "An Open Letter to Farmers." The letter is addressed to those who may attend the meetings of the farmers' organizations called to meet in Washington, April 19-21, and proceeds to lecture them upon the menace of farmers' business organizations.

After laying down the two principles: "Progress and prosperity are not for one class at the expense of others," and, "In a democracy no class can be taxed for the benefit of another class," it proceeds to discuss the dangers of the Farm Bureau movement as follows:

"Will you not in the course of your deliberations make it clear that as the representatives of the self-respecting and self-supporting farmers of the nation, you are willing and able to establish and maintain your own organizations for business and commercial purposes—which every thinking man in America acknowledges you have the undoubted and the inalienable right to do—without seeking a paternalistic extension of Government aid and assistance, paid for by the taxpayers of nation, State and county?"

"We are sure that no association of producers should be permitted which will so control the supply as to arbitrarily fix the prices, and that this applies to producers of agricultural commodities as it undoubtedly does to producers of manufactured commodities. Further than this we are assured that the public, which is the Government, will not permit the selfish consumption of such control, and that efforts at such control lead to either one of two serious results, the assumption of the control by a paternalistic government, which is socialism and the end of democracy, or the assumption of control by some individual or commission constituted for this purpose, which is individual or bureaucratic autocracy and equality the end of Democracy."

"The Farm Bureau organization is drawing into its membership the largest number of farmers ever grouped together into a single federation, equalled only by the membership of the National Grange in the days of its greatest development in the late seventies. The danger is a very real one that the effort, if there is such, to defy economic and political laws will wreck not the laws, but the organization itself. When this happens the disappointment and discouragement of its members will set back for another quarter or half century the essential, safe and proper organization of the farmers, which is needed to develop their own interest in harmony with, and not against, the principles of our democracy, and of economic and social truth."

In the first quoted paragraph the writer makes the common mistake that governmental assistance to agriculture is class favoritism. Nothing could be farther from the truth. Every fundamental industry is aided by assistance and information furnished by government bureaus. It is right that they should be for the sake of economy and efficiency and because the fundamental industries touch the life of every citizen.

The second paragraph echoes the far-fetched and fictitious fear that farmers will squeeze consumers unmercifully if they are permitted to effect such modern business organizations as are found in other lines of business. We want to state a note of warning that this kind of propaganda has been spread so assiduously thru magazines and papers the past few months that the passage of some of the bills introduced into the last Congress is now doubtful.

In the last paragraph there is an effort made to create the impression that the Grange movement in the seventies was disastrous. It was, in a measure, but to the enemies of the farmers and good government. Conditions had become so unbearable that the "Granger Movement" became a successful, revolutionary movement to break the chains of monopoly and special privilege.

Pennsylvania Farmer is not here defending the Farm Bureau movement especially, but we have gone at length into this subject because the article referred to and quoted from is but a single example of the nation-wide drive being made to create public sentiment and influence Congress to the end that legislation demanded and needed by farmers may be defeated. It will require the continued co-operative efforts of the Grange, the Farm Bureau Federation, the National Board of Farm Organizations, the Farmers' Union, the Dairymen's Organizations and all others to successfully combat this vigorous and well-planned attack. Farmers must be careful that the much-talked-of emergency tariff measure which it is proposed to pass does not turn out to be "sop."

Our Washington Letter

A number of new developments are promised in the Federal Farm Loan situation in the near future. One proposition which is to be brought before Congress for action, it is believed, would greatly enhance the usefulness of the system, as it would insure the Farm Loan banks a vast reservoir of funds with which to meet the credit needs of the farmers.

The War Risk Bureau people are going to ask for an amendment to the law which will permit them to invest their reserves in Farm Loan bonds. As they have quite a lot of money now available, this would make a market for Farm Loan bonds. The War Risk reserves in ten years, it is estimated, will amount to a billion of dollars, and will absorb fifty per cent of the Farm Loan bonds.

April 16, 1921

A new angle in the farm credit situation is developing some highly interesting information. The Department of Agriculture, Farm Loan Board and the farmer organizations represented at Washington have received many complaints to the effect that farmers in many parts of the United States cannot borrow enough money on their lands to be of any material assistance to them in financing their farming projects.

The Department of Agriculture estimates that in Iowa the average farmer cannot borrow more than 28 per cent of the value of his land on first mortgage from the Federal Land banks. The department estimates that in Oregon, a comparatively new state, the average farmer cannot borrow more than 46 per cent of the value of his land.

This situation grows out of the limitations placed on loans. First by the Farm Loan act itself, which prohibits Federal Land banks from lending more than \$10,000 to single individuals, and second, by a ruling of the Farm Loan Board which further restricts loans to a maximum of \$90 or \$100 an acre, regardless of what value the land may actually have.

All of this has caused a quickening of interest in the second mortgage as a means of increasing the farmers' power to borrow.

Those who are pressing the matter feel that the proper and successful development of second mortgages as an additional instrument of credit will add considerably to the farmers' borrowing power and will result in giving him loans representing a much larger percentage of the value of his land. The bill is being drafted to create banks to handle second mortgages, the banks to deal exclusively in second mortgages.

HARRISBURG LETTER

Agricultural Legislation.—With exception of the bill to require assessors to make certain reports on crops and acreage to the Department of Agriculture the State administration has backed up Secretary of Agriculture Fred Rasmussen's program. The bills for penalizing persons who ignore the potato blight, and war quarantine, for control of bees and their diseases and various other projects have been approved; the pure bred stallion bill is in the hands of the Governor for action, the pure seed bill is on its way and substantial sums will be given to the department for its work and for continuance of institutes and other field work. Secretary Rasmussen has linked up certain activities with State College and is on a fair way to have the farm bureaus in closer co-operation with the State. If only the State Fair project can be adequately financed to start it the program will be in good shape.

Dog Licenses.—The bill for state control of dog licenses, making county treasurers issuing officers on the same basis as in hunter's licenses and providing for the control of dogs and claims, etc., has been presented. The county commissioners' committee is not opposing the plan and the county treasurers, who will get a ten-cent fee, are not getting in the way. The experience of the last few years has shown need of a strong centralized authority and the new bill does not relieve constables, but broadens state power. It is the intention to employ agents and attorneys, but the claim is made the revenue will be ample for that and to meet the claims for sheep and animals and poultry killed by dogs a couple of times over.

The Peak Year.—The manner in which the State Highway Department has started off its road construction contracts and the systematic way in which additional revenue for this purpose is being sought confirm the reports that this was planned to be the banner year in road construction. William C. Sproul is evidently determined his administration will be remembered by road building. Contracts for over \$5,000,000 worth of roads have already been let and more will follow, while the state will not only join in state aid projects, but help counties and townships with expert advice. Extensive resurfacing and oiling operations will also be carried on.

Few Changes.—The policy of the state is not to make any changes in state routes and to add none at all,

if possible. There are dozens of such projects in bill, but there is a limit even to Pennsylvania's millions.—Hamilton, Harrisburg.

NEW YORK LETTER

Potato Spraying Increased.—Plans to greatly increase the number of fields of sprayed potatoes in Onondaga County will be made this spring. Spraying resulted in such increased yields last year that double the number of farmers want to spray this year.

Licensed Drivers.—In 1903 there were 2382 licensed chauffeurs in this state. Now there are 220,000, and the number grows at the rate of 100 or more per day.

Rural School Standards.—Higher standards for teachers and a fairer equalization of rural school taxes were deemed the two great essentials towards school improvement at a recent meeting of persons interested in the rural schools of seven counties of western New York. As the matter is a rural one, the committee of 21, to investigate it, is largely composed of farmers, and is to send questionnaires to farmers to determine their ideas on giving rural children fairer educational opportunities.

Waste Thru Duplication.—A New York city daily paper is investigating the waste that occurs thru Federal duplication of effort. It finds that in 1919 there were 16 cook books published by the government, not that they were all needed, but because one was needed and 16 departments wanted to be the one to fill the need. Over 300 similar duplications have been found, though the survey is not a thoro one. Eleven departments are engaged in regulating foreign commerce; 15 are engaged in education, 10 in public health work; 16 in chemical research; 22 in engineering research; 25 construct or supervise public buildings; 7 have a hand in Alaskan affairs. With Federal Government costs amounting to \$43 per capita there can be no release from taxation until such methods are corrected. Similar conditions are said to exist in the New York state government more or less.

Empire State Applies to be Standardized.—Growers of apples of the Western New York Central Packing House Association have adopted the brand name "Cataract" apples and will standardize the fruit and the containers used and reorganize packing. They expect to ship from 3000 to 5000 cars per season and to have closed to 50 local organizations completely soon. The average local membership is 20 and the average cost of packing houses is \$7000. Fruit will be sold direct from each house under supervision of the parent association.

To Restore Rural Mail Routes.—A drive has been instituted to get the new postal administration to investigate and to restore rural mail routes as they were before war time changes were made. It is believed many routes will be restored. Inspectors are now at work on Madison Co. routes.

Fruit Injury.—State peaches are badly injured, while those of New Jersey, it is said, were 95 per cent damaged, due to the hard frost following Easter. Sour cherries were hit 50 to 90 per cent in this state; pears 50 per cent; Japanese plums badly hurt, while early blossoming apples were hurt 30 to 40 per cent.

NEW JERSEY NEWS

No Daylight Saving.—New Jersey as a state, will not have daylight saving this year. This is definitely settled by the fact that the 1921 Legislature adjourned sine die on Friday, April 8, with the Eldridge bill providing for a change in time still in the hands of the Senate Committee on Labor, Industry and Social Welfare. It was not reported out in the Upper House, and while it is true that the Senate will again be in session in about three weeks from now, no action will be taken on this or any other bill coming before the session. The object of the second assembling of the Senate is for nothing else than to confirm an appointment to the superintendency of the State Constabulary to be sent in by Governor Edwards. The agriculturists of the state will save thousands of dollars by the fact that there will be no change in the time.—Kelly, Trenton.

Pennsylvania Farmer

7-431

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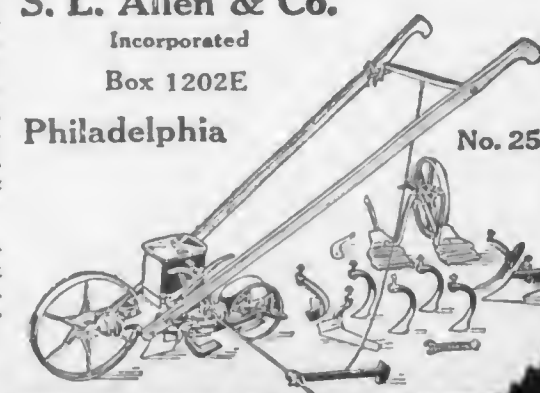
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HORTICULTURE

Care of Plum and Quince Trees

PLUM and quince trees are given little consideration as to pruning, yet these trees should have just as much attention in regards to this work as the other fruits. Neglect of proper trimming, will not only produce inferior fruit, but will gradually diminish the quantity and will shorten the profitable life of the specimen. To be frank, the plum should be taken better care of than the quince. Most growers seem to think the quince can get along without the aid of the pruning shears. Where this prevails, the crop almost always assumes a bush form and the glutted head gives only a scattering few worthless fruits. It is true some plum trees need less trimming than others, but all need to be carefully trimmed.

It will be noticed, some of the Japanese varieties of plums, are spreading growers, that will require a lot of trimming while young to give them the proper shape. Others will grow more or less in a very cramped condition and will need careful cutting and trimming to properly broaden the top. To consider each would be useless, as each tree is a law unto itself. When young, if rightly formed, plum trees will need very little trimming later in their life. Sometimes there are sucker growths which develop. Where these occur, they should be removed promptly, as they take up too much of the strength of the tree. The fruit of the plum grows on spurs that are anywhere from two to four years old, while some fruit, however, is borne on the past season's wood. When pruning, one must be careful so as not to destroy or break off these fruit spurs. Should these growths become too rampant, heading back of the plum will be necessary. This growth does not generally take place among bearing trees.

Forming the Head

The head, in forming plum trees, should be started from three to four feet above the ground. Care should be exercised against the main framework branches making bad crotches, as plum trees will load heavy as they come into full bearing, and there is liable to be a bad splitting of limbs if weak crotches are permitted to form. A few main framework branches should be allowed to develop from the trunk, but these should be stopped when fifteen to twenty inches long, in order to form specimens that are well branched. The same principle for trimming young plum trees as is required in young peach trees, as far as the top is concerned.

Lateral spreading varieties will have to be kept back by cutting the leading shoots to buds pointing inwardly, in order to send the branches up, in preference to straight out. Where the shoots crowd at the top, head back the leading shoots to buds on the outside, in order to produce a spreading at the top. The tree should be kept sufficiently open, so as to facilitate the gathering of the fruit and to allow easy access of the spray mixtures. Pruning cannot be practiced to any extent in thinning the fruit of plums, even if the new

wood is headed back. This does not remove the fruit spurs. Plum trees are apt to overload, and to overcome this, one must thin the fruit. Unless the practice of thinning is carried out, many varieties will die, due to overbearing, besides ruining the trees, due to breaking of the limbs.

The quince, different from the plum, bears its fruit at the terminal of new shoots, which are developed during the current season. It is wisdom on the part of the one pruning to conserve as much of the strong wood as possible of the last season's growth. Where the growth was two feet or more last season, heading back of the leading shoots one-third their length will be necessary. With quince trees the head should be formed from eighteen to twenty inches above the ground, where five or seven main framework branches should be allowed to form about the top of the shortened trunk. These should be sturdy and well placed.

Weak shoots will develop on quince trees and should be cut away at the annual pruning. Where these weak shoots are allowed to develop, the tops become a mass of tangled wood and very little salable fruit is produced. In order to cause the fruit to set on the outside, it is important to keep the internal wood cut out.

The head should be kept open, as the quince tree needs spraying, as do other fruits, and it would be difficult to readily reach all parts of the tree. Only a small amount of annual pruning will be necessary, once the quince tree is properly formed. This generally consists of keeping the weak wood removed and the heading back of the strongest leaders. In order to insure a profitable growth, where suckers are produced, they should be quickly removed, to keep them from interfering. Each branch should stand alone, and in pruning it is well to see that each branch does this by removing all shoots that interfere with each other. The quince is very hardy and trimming can be attended to at any time, but it would be well to choose the mild spring weather for cutting young plum trees.—W. G. Allbee.

FALL BEARING RASPBERRIES

Several of our neighbors have planted everbearing raspberries but rooted out the bushes a year or two later, not considering them worth growing. One had reported a bountiful crop one year but none the next. It was with these rather discouraging accounts in mind that we ordered twenty-five plants of the St. Regis variety two years ago. The plants were set in good soil which was not too moist and given good cultivation the first season. They grew rapidly and bore a few berries but were not of much account the first season. The next year cultivation was continued and all outside shoots pulled out. Considerable pruning was also done. The result was berries all summer and well up until frost. Unlike berries grown by our neighbors, these were of good size and hung in heavy sprays.

The total crop must have been

considerably larger than that of ordinary varieties and we believe that early pruning had something to do with our success. Ordinary raspberries produce the fruit upon canes grown the previous year. The buds are set the fall before fruit ripens, as is the case with most of our temperate zone fruits and berries. In the case of the St. Regis variety, the canes grow in the spring and bear fruit the fall of the same year, in fact some of the current season's canes ripen fruit as early as July.

The problem of getting fruit from the everbearers depends upon getting an abundant growth of wood early in the spring. If this growth continues right thru the summer, there may not be much but wood. In moist soils this is apt to happen. The canes should start early in the spring, then they should be judiciously pruned, and the new growth allowed to harden and blossom.

A good way to increase the plantation of this variety is to take up the suckers which will be found coming up all around the old plants. These may be pulled out easily, so the task of keeping the plantation within bounds is not difficult. One season of neglect, however, makes the job well-nigh hopeless.

Pruning has a good deal to do with the bearing habits of the variety. Leave the old wood if early berries are wanted from the St. Regis. Late summer pruning will induce growth that will bear in the fall. Fall bearers need a little fussing with, but really now, isn't a dish of nice raspberries along in October worth fussing for?—C. H. Chesley.

ROOT MAGGOT

I am having trouble with maggots in my early truck. I have had some trouble with onion maggots before but this year my lettuce and even peas are infested. Can you tell me what I can do to rid my ground of this pest.—J. A. V., Cumberland County, N. J.

The maggots which are bothering you are probably the so-called seed-corn maggots which do considerable injury to beans and peas. The fact that you use large amounts of manure probably has much to do with your trouble as manure attracts and protects the adult maggot which is a two-winged fly. The application of carbolic acid emulsion is the only direct method of combating this pest. The emulsion is prepared by dissolving one pound of hard soap in one-half gallon of boiling water and then adding one pint of crude carbolic acid. This should be thoroughly mixed, preferably by the use of a bucket pump, until a smooth emulsion is formed. This stock solution is then diluted at the rate of one part of the emulsion to fifty parts of water.

The trouble should be lessened by applying the manure as early as possible as the insects seem to be worse when it is applied in the spring. You are no doubt familiar with the use of tar paper discs for the control of the cabbage maggot. A similar pest attacks onions. The carbolic acid emulsion may be used on the onions and each year's crop should be planted as far from that of the previous year as possible.

Generally speaking, the farmer, and particularly the potato farmer, should utilize clovers, vetches, alfalfa, etc., in so far as it may be practicable. These, by accumulating nitrogen in the soil, will materially reduce the need for using large quantities of nitrogen in commercial fertilizers.



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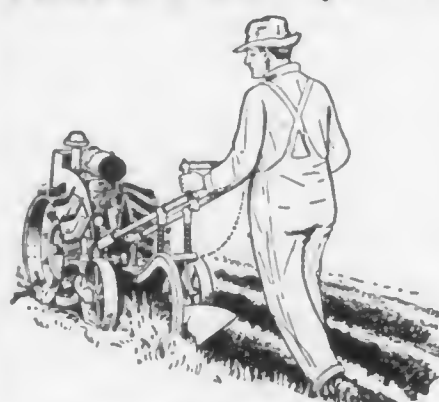
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(Continued From Page 5).

few blossom buds; think these are damaged. I can't feel that the loss was very great in this county.—H. N. Reist, Co. Agent.

Bradford Co., Pa.—The most serious damage will only effect the limited peach crop of this county. Since there are comparatively few extensive orchards of this crop, the damage is hard to forecast. Our altitude is higher than most parts of the state and crops are not as far advanced as in some sections. Consequently, the damage will not be so serious.—D. K. Sloan, Co. Agent.

Fayette Co., Pa.—In some sections the blossoms were out and the thermometer registered 13 degrees. In all possibility these fruits were killed.—Fayette Co. Farm Bureau.

Columbia Co., Pa.—Damage on all fruits very great, probably 60 or 70 per cent frozen in case of peach, apple, pear and plums.—P. G. Niesley, Co. Agent.

Lebanon Co., Pa.—Peaches, 75 to 80 per cent of buds were frozen. Plums and cherries, practically the same as peaches. Apples, 35 per cent of crop lost by freezing. Smokehouse, Stayman Winesap and Duchess were hit very hard. Early Harvest, Yellow Transparent, Grimes Golden, Jonathan and York Imperial are still in good condition.—A. C. Berger, Co. Agent.

NEW YORK

Tompkins Co., N. Y.—The recent damage in this county was confined to the smaller fruits, sweet cherries, peaches, plums, etc. We have but a limited number of small fruit growers. There are, however, a large number that grow their own small fruits and I suspect the amount of loss would run into several thousands of dollars.—V. B. Blatchley, Co. Agent.

Allegany Co., N. Y.—This is not a fruit county, but I believe that fruit is badly damaged. No other injury.—C. B. Raymond, Co. Agent.

Tioga Co., N. Y.—Very little damage was done by frost to the crops in this county. In perhaps a few instances, the buds on apple trees had started enough to endanger them a little but I doubt if the frost has been bad enough in any part of the county to do much damage.—H. B. Fuller, Co. Agent.

Chemung Co., N. Y.—There was practically no damage done to crops in this county excepting small fruits. The buds on the small fruit trees were frosted. As far as I can find out winter wheat was not hurt.—R. H. Hewitt, Co. Agent.

West Chester Co., N. Y.—Apparently no damage in this county.—J. G. Curtis, Co. Agent.

Broome Co., N. Y.—The setback to clover and alfalfa I would estimate at 7 per cent. The total amount of damage in the county is small on account of the small amount of fruit grown here.—J. F. Eastman, Co. Agent.

Chenango Co., N. Y.—Very little damage was done. Fruit buds were injured but as this is a dairy county little loss was sustained.—C. E. Smith, Co. Agent.

Dutchess Co., N. Y.—Sweet cherries, 100 per cent loss. No other damage.—F. H. Lacy, Co. Agent.

Sullivan Co., N. Y.—Last week's temperature fell 45 degrees within a period of six hours. Due to high elevation which averages about 1800 feet, therefore the county fruit was not severely injured. Much damage was done to plums and peaches. On the average as far as I am able to tell now about a 40 per cent damage occurred.—Co. Agent.

Cortland Co., N. Y.—No damage done here.—M. D. Butler, Co. Agent.

Orange Co., N. Y.—No appreciable damage noticeable at present.—L. D. Greene, Co. Agent.

Delaware Co., N. Y.—As there is very little fruit in this county and no spring crops yet up it would be very difficult to estimate the amount of damage done. It probably would be comparatively small in this county.—E. G. Brougham, Co. Agent.

Steuben Co., N. Y.—To the best of our knowledge the damage done by the late cold spell to various crops in this county was so slight as to be practically negligible. The weather in this vicinity was not severe enough to cause any serious setback to buds, etc.—George H. Branland, Asst. Co. Agent.

NEW JERSEY

Cape May Co., N. J.—All varieties of peach show a 95 to 99 per cent injury. All plums that were in blossom (and that means nearly all) show 95 per cent injury. Pears (Kieffers) are injured 98 per cent. Yellow transparent apples injured 90 to 95 per cent and 12 to 15 trees of various varieties have been examined about the Cape May Court House, Rio Grande and Dias Creek sections of the county and it is a sorrowful sight. I believe 90 per cent of the buds are dead.—J. A. Stackhouse, Co. Agent.

Somerset Co., N. J.—The following is the estimated damage done so far as we are able to ascertain at this time. Apples, 35 per cent loss; peaches, 75 per cent loss; pears, 60 per cent; plums, 95 per cent; sweet cherries, 90 per cent; sour cherries, 50 per cent.—Harry C. Haines, Co. Agent.

Camden Co., N. J.—Peaches, 95 to 100 per cent damaged; apples, 75 to 100 per cent; cherries, 95 to 100 per cent; pears, 95-100 per cent. Early pears, 50 per cent; cabbage, 25 per cent.—Samuel F. Foster, Co. Agent.

Morris Co., N. J.—In the following locality no perceptible injury was noted on fruit trees: Florham Park, Pine Brook, Mt. Freedom, Hanover, Hanover Neck, Mt. Tabor and Dover. In New Vernon, it was reported that cherries and pears were ruined and apples and peaches about 10 per cent. In Pine Brook, while there was no damage to fruit trees, there was injury to lettuce and beets. In Dover, there was injury to vegetables growing in cold frames, due to carelessness on the part of the farmer. On the whole, therefore I think that we have come out very luckily and I hope that later results will show that little injury was done.—Berten E. Elv, Co. Agent.

Middlesex Co., N. J.—The fruit crop is of course, the principal one which was injured. The amount of injury I should estimate about as follows: Peaches, 92 per cent; cherries and plums, 90 per cent; apples, 50 to 75 per cent of the buds killed.—Orin G. Bowen, Co. Agent.

Sussex Co., N. J.—From what I can learn by examining peach, plum and apple trees, I should say that the damage to the buds on the first two was about 25 per cent and on the apple trees very little damage has been done by the late freeze. Other crops were not hurt at all.—F. Leon Brown, Co. Agent.

Warren Co., N. J.—I submit the following percentages of each. Peach, 75 per cent; apple, 50 per cent; plum, 85 per cent and cherry, 90 per cent. These tests were made in the vicinity of Belvidere which is usually a few days earlier than the northern end of the county due to high elevation. Possibly the damage there is not as severe.—W. A. Houston, Co. Agent.

MARYLAND

Queen Anne Co., Md.—One-half of peaches killed; 10 per cent of apples.—O. C. Jones, Co. Agent.

Cecil Co., Md.—I would estimate about fifty per cent of the peaches, pears, cherries and strawberries were killed by the last freeze. I think very few apples were injured, probably 5 per cent.—W. C. Snarr, Co. Agent.

Kent Co., Md.—Peaches, 60 per cent damaged; cherries, 60 per cent; apples, 3 per cent; pears, 25 per cent; wheat, 1 per cent.—H. B. Derrick, Co. Agent.

Allegany Co., Md.—Apples, sap froze thru the two barks. Estimated damage to apples—Baldwin, 75 to 90 per cent; York, 70 to 85 per cent; Grimes, 80 to 90 per cent; Jonathan, 70 to 85 per cent; Stayman, 70 to 85 per cent; Romes, 45 to 50 per cent. Peaches, pears and cherries about 85 to 95 per cent.—R. F. McHenry, Co. Agent.

Talbot Co., Md.—We have a number of waterfront farms, on these very little damage appears to have been done by the late cold spell to peaches and apples. Inland farms, where fruit is grown, show almost 100 per cent damage to peaches. Apples, the damage varies greatly with varieties. Wheat shows apparently little injury.—E. P. Walls, County Agent.

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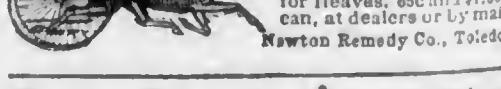
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Raising Farm Horses

By W. H. TOMHAVE

ACCORDING to a recent statement issued by the Horse Association of America less than one-fourth of the horses used in Pennsylvania and East are produced upon the farms of these states. Most of the horses used in this section are raised upon the farms of the Middle West and shipped to eastern markets during the winter and spring to meet the requirements of the Eastern farmers. This practice means a good market for the western horse producers with no marked advantage for the eastern farmer. This method of securing horses is expensive for the farmers of the East and they do not secure the kind of horses that should be found upon more eastern farms.

The breeding of farm horses thru-out the East has been at a low ebb during the past few years. This has in part been due to the high price of feed that has prevailed and also due to the lack of interest in horse production brought about by the scarcity of help and the thought by many that power machinery would take the place of horse power to a very large extent. These conditions are changing and the people are beginning to appreciate the value of horses as a source of farm power and the importance of good horses. Some of the work upon the farms and in cities can be done with machine power to better advantage than with horses. The great bulk of the work upon eastern farms will always be done with horses and there is a certain type of hauling in cities that can be handled to better advantage with horses than with truck. Horses have not declined in price during the past year to the same extent as other classes of farm animals and are finding a ready sale this spring. The horses may be selling somewhat lower on the central markets but the eastern farmer has not had the advantage of such decline due to the increased cost of transportation. There is little possibility that the price of horses will decline very much during the next few years on account of the lack of interest in horse breeding by the farmers of the country. There are not enough good young horses in the country to meet the demand from all sections during the next few years.

The farmers of the East can develop a very satisfactory source of additional income from their farms by greater interest in horse breeding. Nearly every farmer is in a position to raise a few colts and develop them each year. The amount of feed necessary and the cost in connection with growing colts is less than the figure at which horses can be sold when mature. The raising of colts does not interfere with the use of the mares on the farm but the additional returns from the horse stock reduces the cost of horse labor. The market demands a heavy draft horse and not small farm chunks. Any horse breeding that is undertaken should be with the aim of producing heavy horses that will weigh 1500 pounds or more when matured. Such horses can always be sold to good advantage when offered for sale

HORSES IN PENNSYLVANIA

While the advent of the automobile and motor truck has practically driven the horse into the discard in the cities and larger towns of Pennsylvania, Old Dobbin is holding his own remarkably well in the rural sections, against the onslaughts of modern inventive genius.

More than half a million horses are still employed on the farms of Pennsylvania, while during 1920 the number decreased only 15,000, a decline of 3 per cent. On January 1, 1921, there were 539,957 horses on the farms of the state representing a total value of \$55,141,507 as compared with 554,019 horses on January 1, 1920.

The average farm horse on the first of the present year was worth \$102.

ALFALFA BEST HOG FORAGE

Repeated tests at various agricultural experiment stations show that alfalfa is the leading forage crop for hogs. The results of demonstrations in Pennsylvania last season are in accord with those findings. Of the eight demonstrations having the lowest forage cost per hundred pounds gain, six of them used alfalfa as forage for the pigs. Farmers co-operated with county agents and State College in operating these demonstrations.

Must be silos pay. Only one-third of the farms in New York State have them, but two-thirds of the cows of the state are kept on these farms.

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DAIRY

Raising Dairy Calves
By MELVILLE WETTACH

Some Common Calf Diseases (Concluded from Last Week).

Scours are the result of indigestion, and usually shown by the undigested milk giving the feces a whitish appearance in the advanced stage. There are numerous causes of scours, such as over-feeding, feeding too much oil meal, feed too rich milk or cold milk, dirty feeding utensils, colds and numerous other causes, usually based on improper feeding. At the first sign of scouring, cut their feed and if the cause is known, remove it. If the calf needs all the milk it is getting, add four drops of formalin for each quart of liquid feed it receives and make no cut in the amount of feed. Do this for a few days and the scouring will usually stop. A whole egg in the milk also helps besides being nutritious. For those calves which have their feed cut, give four table-spoons of castor oil. Castor oil is a general treatment for most internal disorders. It may be fed in the milk.

White scours are caused by bacteria which are present when the calf is born and prevention is the best remedy. It affects the navel of the calf and may not be noticeable until the calf is a week old. By that time it is usually fatal. It usually occurs in the winter on large dairy farms where the cows have to calve in dirty stalls where the disease is already present. There is much less danger from it in the summer when the cows can calve in the pasture. To prevent white scours, the pens should be thoroughly disinfected, well bedded and the navel of the calf disinfected with iodine as soon as it is born. If a fatality from white scours has occurred, the stall should be cleaned out, disinfected and well bedded. It should not be used again that year.

Contagious Ophthalmia or sore eye may come from a cold, producing a running eye, or it may be the result of an injury. The pupil of the eye first becomes cloudy and then white. In severe cases all colors may be present and the blindness may become permanent. Isolate all cases and wash the eye often with a solution of one dram boric acid to four ounces of boiling water. Apply as an eye wash when cool.

Lice are of two kinds, red and blue. The red lice are not of importance but the blue ones do the damage. They sap the vitality of the calves causing a loss of weight, weakness and lower the calves' resistance to disease. A sure remedy for lice is to rub the affected parts with a dip made by mixing together three table-spoons of creolin and a gallon of water. Many dairymen use coal oil with good results. There are also many commercial lice killers which are effective. Whatever treatment is used, however, in this case, should be repeated in ten days to catch the new hatch. Before going into winter quarters the calves should be thoroughly gone over for lice. During the winter it is good to wash them frequently with the dip to make sure the lice do not get a start.

There is no danger from colds if the calves are rubbed dry afterwards due to the warming effects of the dip. The pens should also be disinfected during the winter with a solution of creolin to prevent the lice getting a start. This is the best way to keep a healthy, growing herd of young stock.

Colds lead to pneumonia and this results in death if the proper precautions are not taken and the necessary treatment administered in time. Colds are the results of leaving calves out in cold, chilling rains with no protection, housing in drafty, damp quarters, and usually start with some indigestion. The indications are, a hot, dry, or running nose, dull eye and sleepy disposition, loss of appetite, skin eruptions, swollen jaw or scouring. At the first signs the feed should be reduced until the calf recovers. Give the calf four table-spoons of castor oil. Isolate any cases. To prevent colds and pneumonia, the calves must have the proper conditions, especially as to quarters and protection from cold rains. Keep their vitality up by getting rid of the lice and they will be able to better resist sickness.

Summary

1—Calf raising is of greatest importance to the dairy farmer owing to the scarcity of good cows.

2—By raising his own calves, the farmer increases the production of his herd and prevents the introduction of disease into his herd from outside sources.

3—Over-feeding is the source of a large amount of the trouble in calf raising. The calves should be fed more according to their individual size and capacity rather than age.

4—Give the calves all the grain that they will clean up and provide the necessary supplements.

5—A good herdsman watches both ends of the calf.

6—Provide clean, light, well ventilated, dry and draft-proof quarters. Cold never hurts a calf, providing it is dry.

7—Supply the opportunity for plenty of exercise.

8—Every sickness is a set-back. Keep the calves growing and use prevention rather than cure.

9—Indigestion and scours are usually the results of improper feeding.

10—Lice sap the calf's vitality and lessen its power of resisting disease. Be sure that the lice are kept down.

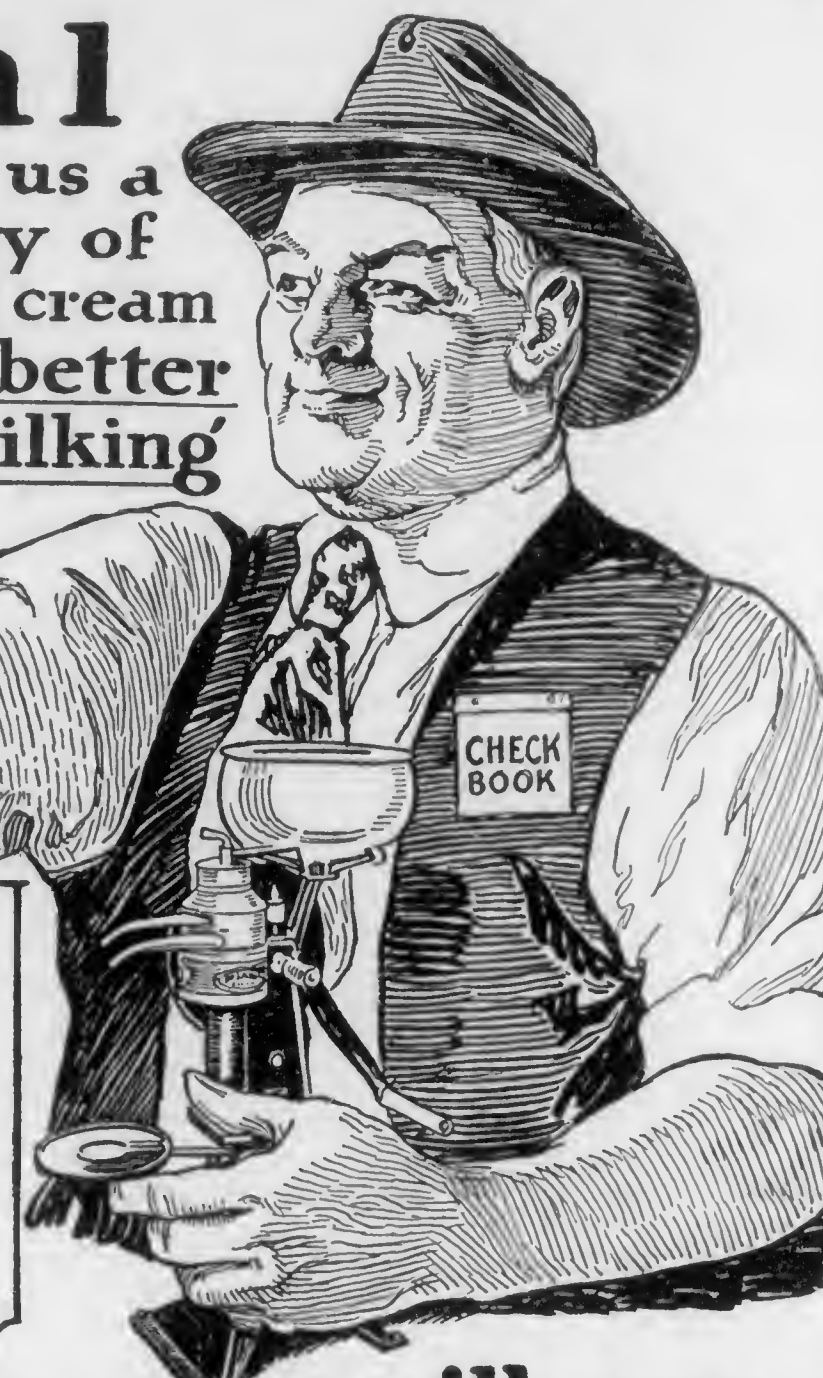
11—Success in calf raising depends on the caretaker.

SPRING DAIRY ITEMS

There is nothing like warm sunshine to disinfect the dairy barn and the bull pen. After the spring springing, allow as much sunshine as possible to reach the stalls and help in cleaning them up for spring. There is not enough commercial disinfectant used in some barns to help out the sunshine. These solutions are cheap to make but they help prevent disease and make the dairy barn a better place for cows to live and men to work.

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Beginners with dairy cattle are often confused as to whether they have boarder cows or not. Often they expect too much from their cows even when the care is not of the best. There is a type of cow which comes between the boarder and the very high producer. I would call it the useful cow. It doesn't make much money for its owner but doesn't lose any. It is the type of cow generally found on the farm. I believe we should all have useful cows and then strive to make them more useful through good feeding methods and also make their progeny more useful by breeding bulls of the best quality.

When purebred cows are low in price it is a good time to get a start. There is less risk in buying purebreds when their cost is not far beyond their value for beef. It is also less risky to sell the grades and buy purebreds when the additional capital needed is so small. Right now purebreds are low in price and so a lot of farmers who have wanted them will decide that the purebred business doesn't pay. In a few years when every one seems to want purebred cows, some farmers will wish they had started now. Those who start now will be supplying their surplus stock to other breeders when prices come back near normal.

It is the general opinion that the auction sales with their high prices have driven farmers out of buying. But this does not mean that there will not be a fair sale for purebreds at a profitable price in the future. Every cent over the meat value of an animal is worth considering. It is not necessary to sell a purebred for many times the value of a grade of the same weight. Even fifty or a hundred dollars is worth considering when selling surplus cows or heifers.

More dairymen seem to be buying the ready mixed feeds to go with the roughage produced at home. In this way they furnish their cows with a balanced ration without buying several ingredients and doing home mixing. The State Experiment Stations seem to know what these mixtures contain and the farmer who is in doubt can find out what he is buying. It saves a little work to use such feeds and guarantees that the cows will obtain appetizing feed to aid in milk production. Farmers using such feeds should not neglect careful accounts. Then the figures will soon teach them which is the most profitable method of feeding.

An auto truck is a great help in hauling live calves to market. Just lead the calf to the back of the truck. The farmer stands on one side of the calf and the hired man on the other. They take hold of hands under the calf and lift. The calf is hoisted on the truck and the gate closed. Several calves can be carried at a load and in a few minutes they have reached the railroad or market. It is much easier than loading them in a crate and joggling along in a wagon.—R. G. K.

Do you know that a quart of gasoline will explode with as much force as 83 pounds of dynamite? And the ordinary stick of dynamite weighs just a half a pound! Makes one think of "Safety First."

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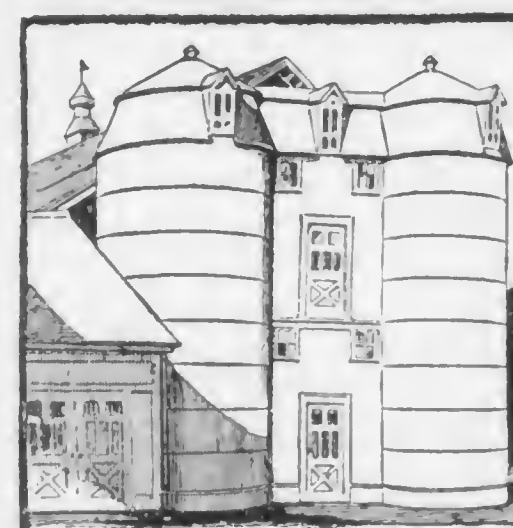
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"Countess True"
World's Champion Guernsey
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The LARROWE MILLING CO., Detroit, Mich.

Countess True
World's Champion Guernsey
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The LARROWE MILLING CO., Detroit, Mich.



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TALKS WITH THE BOYS

EDITOR'S LETTER

To the Boys:

How many of the readers of this page are interested in stock judging and boys' clubs? How many of you have taken part in stock judging contests in your county? In several of the letters that we have received the clubs have been mentioned but we would like to hear more about the work you are doing.

Last fall after judging contests had been held in several parts of Pennsylvania the winners went to State College with their club leaders where they got some more instruction on judging and then went on to the great livestock exposition at Springfield, Mass., where they took part in contests with boys from many other states. We had the good fortune to be in State College at the time the boys were there and we stayed at the same house with some of them. They were a fine, wide-awake bunch and it was a pleasure to talk with them. It was a wonderful trip for the most of them and you may be sure they all were glad that they had gone into the club work with all their might. One of the boys told me that he had never ridden on a railway train until that day on the way to State College.

The fine part of it all was that every one of the boys lived on a farm and of course worked there. No doubt when the sun was hot and the work hard some of them sometimes thought that farming was a pretty poor occupation to take up, but I am sure that none of them thought that way while they were on their trip when they had a chance to see the immense importance of farming and to get new ideas to take home.

Perhaps some of you who are reading this were among those who went to Springfield and I hope that a great many of you will have the opportunity to make the trip some time in the future. If there is no boys' club in your community and no judging contests have your father talk to the county agent about it.

When you do get into the judging contests of course you will try hard to win but you must remember that everyone cannot get the first prize. You can be pretty sure that you will get it if you try hard enough and keep at it, but when you do lose be a good loser. Do you know that some of the most admired of college football teams in the country are noted no more for their great victories than for the sportsmanlike way in which they take defeat? They fight hard but when the whistle blows and the game is over and they realize that they have lost they don't get sour at themselves and the world in general. They are proud of themselves because they know that they have done their best and that it took a good team to beat them.

Let's hear more from the boys in the clubs and contests and from those who are good losers as well as from the winners.

*Sincerely,
The Editor*

BOYS' LETTERS

Dear Editor—I am fourteen years old and live on a farm of fifty acres. We have two horses, six head of cat-

tle and about 250 White Leghorn chickens. I have five rabbits. I like trapping but furs did not bring a very good price this year. I help father to do all the farm work. Our school is about a mile from my home and I am in the seventh grade.—August Boehner, Sullivan Co., N. Y.

Dear Editor—I am eleven years old and we live on a farm of fifty acres. I have three sisters and two brothers.

We have four head of cattle, three big horses, seven pigs and a lot of chickens. I always help Papa to hunt the eggs. I have a Belgian hare which I can catch when it runs from me. Last summer I raised seven little hares.

I go to school, which is about a mile and a half from our farm. I received little cards for not being absent from school.—Colt E. Eisenhart, Adams Co., Pa.

Dear Editor—I was eleven years old on Easter. I have one sister older and a brother and sister younger than I am. We have five cows, three horses, chickens, geese and ducks. I like to hunt the duck and goose eggs.

I can hardly wait until I get the Pennsylvania Farmer so that I may read the Boys' Page and look at the Picture Page.

Our school stopped April 4. I saw only one letter in this Page from Lancaster County and hope this one will get in.—Samuel H. Barnes, Lancaster Co., Pa.

Dear Editor—I am eleven years old and live on a farm of 28 acres. I am in the fifth and sixth grade in school. We keep four cows and two horses and one of them is a colt.

I have a heifer named "Goldy," one year old and is due to freshen the ninth of July.—E. Trumble, Cortland Co., N. Y.

Dear Editor—I live on a farm of 128 acres about one mile from North Brook, Pa. We have two pairs of young squabs, three horses, thirty chickens, and three cows which I milk every night and morning.

I saw some articles in your paper about bird houses and would like to have some information about making houses for the raising of pigeons.

I am in the seventh grade and am twelve years old. I like to trap and hunt and last winter I got a new Winchester rifle and shot an opossum and a rabbit.

We have a garage in the rear of our house in which we keep our car. We also have electric lights and running water which are a great help.—Wm. J. Fryer, Chester Co., Penna.

Dear Editor—I am twelve years old and live on a farm of 130 acres. I live one mile from our school and am in the fifth grade. I have three brothers older and one sister younger than I am.

We have ten cows, four horses and a colt eight months old which is quite a pet. I also have a pup which is all white with the exception of one spot which is black, so I call him "Spot." I am going to train him to help me to get the cows which is my job in summer.—Harry Mann, Bradford Co., Pa.

PASSING EVENTS IN PICTURES



- 1—The Cathedral, at Baltimore, where Cardinal Gibbons served so long and where he was finally laid in state for the thousands of people to view him.
- 2—U. S. S. Delaware passing thru the Panama Canal.
- 3—Eugene V. Debs, late Socialist nominee for President, is back in his cell at Atlanta Federal Penitentiary, after having made

- a flying trip, unaccompanied, to Washington.
- 4—Bolivar Statue which will be unveiled by President Harding in New York, April 19.
- 5—This two-headed calf was born on an Ohio farm. It had two perfect heads and drank milk with both of them, but it had only six legs and thus handicapped, it tired of

- life and died a short time ago.
- 6—Miss E. A. Riker, who has just dismounted from her horse, at Hot Springs, Va.
- 7—The new Cabinet being photographed by the movie men.
- 8—Photograph of the Detroit "Tigers" recently taken at their training camp in San Antonio, Texas.

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Of Interest to Farm Women and Girls

Beautifying the Home Grounds

THE writer of this article has made flowers a study for over twenty-five years until they have become an actual hobby, and a pleasing, satisfying hobby at that. But owing to circumstances causing a change of residence a few months ago, the old home and most of the flowers were left behind.

The new home was found to be barren of flowers and shrubs, but plentifully supplied with trees and fruit which are a good beginning toward attractive surroundings.

No home grounds are complete without some evergreens as they are alike beautiful in winter and summer; in winter they supply the only green in the landscape and in summer form a splendid contrast with that of deciduous trees and shrubs. They can be safely planted either in spring or early autumn.

Few people realize how much their home surroundings can be beautified by planting some shrubs and perennials, and a few dwarf evergreens, something that will be lovely, not only in the blooming season, but at all times and will increase in beauty as the years go by, with but little care and money expended.

If a nice smooth expanse of lawn is left in front of the house, it looks much better than it would if flower beds and shrubs were dotted over it here and there promiscuously. There should be a planting of suitable shrubs near the base of the house to conceal the foundations and give it a more home-like setting. If doubtful about this, compare the bare unsightly houses that show the entire foundation, with a house that is surrounded with shrubs and evergreens, and note the difference.

Then plan to have trees and shrubs at the back and sides of the house. Some good fruit trees such as pears, cherries and plums not only look beautiful in a back yard, but they add to the comfort of the family and save the pocketbook as well, when fruiting season comes. Try to have one, or more, good shade trees near the front of the house, one placed near the corner looks more attractive generally than when placed directly in front center.

By looking over the floral catalogues one can choose shrubs for the shady border as well as for the sunny one.

The writer is already planning one for the front of the new home this year where it will be real shady, as the house fronts to the north with two large shade trees about fifteen feet from the front porch. Some forethought is needed to cope with such a situation, but an order has already been sent to a nursery firm for some rhododendrons, azaleas, two Norway spruces, also a Japan cypress tree. The rhododendrons and azaleas will not only be evergreen, therefore beautiful twelve months in the year, but they also bear lovely flowers in the spring, some of them very fragrant. These will be placed near the base of the house. Directly in front of them will be a row of some of the old-fashioned foxgloves (Digitalis) with their lovely, pendulous bells of various colors; campanulas pink, white and blue, a clump of

globe flowers (Trollius) and some myosotis. The latter may be used as an edging as it is low growing, and if the blossoms are cut off as soon as they fade, the blooming season may be prolonged indefinitely. In this way flowers can be had in the shade.

There will be a nice bed of perennial phlox (each clump a different color) in one of the borders at the side of the house; also a few plants of Delphinium, blue, white and yellow, as a florist has been found that has the yellow delphinium which has been unknown to the writer heretofore; also some geums, spirea, astilbe and some hardy candytuft and sweet alyssum will be added, thus making a fine border that will furnish blossoms year after year without an annual planting.

As it is so hard to care for annuals each year, we have only planned to have a few this year, some asters, zinnias and scarlet sage (salvia) and with my window boxes well filled with geraniums, coleas, and wandering Jew vine, the home will be supplied with sufficient flowers and greenery to make an attractive appearance, and still not cause the mistress of the home to be worn out caring for them, as a man will be engaged to put the beds in shape and plant the trees, shrubs and perennials.—E. M. L. B., Susquehanna Co., Pa.

KEEPING LITTLE FOLKS BUSY

Nothing goes farther toward keeping a happy contented flock of little folks ranging from about 6 years to 10 or 12, than a generous supply of wax crayons, plenty of drawing and tracing paper, and a few good pictures for copying. All the materials are cheap and all children are delighted with them—at least I never saw one that was not. Besides being highly entertaining, they are instructive and they furnish unlimited opportunity to cultivate good taste. One is often greatly surprised at the excellent judgement displayed by quite small children in making attractive and harmonious selections. It doesn't take long either for them to learn what is appropriate for the various articles they may wish to decorate. Don't be discouraged if the little tots do make scarlet horses and violet cows at first. This afternoon one of my little lads of six made an elaborate lavender bird; did I criticize? Not a bit of it. The work was painstakingly done and the result unusually satisfactory.—E. M. A.

FIXING UP THE DINING ROOM

It is not hard to clean house if you have a new house. But if you have an old house with poor woodwork, uneven floors, and ceilings either too high or too low, and even the rooms of uncertain size, you have a real problem. When I read about the romance of rambling old houses and the wonderful results that can be accomplished by just refurnishing them in simple old-fashioned style, I cannot help but wonder if the writer has priced simple, old-fashioned draperies and furniture, or wrestled

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with crack-filler or plaster that has knack of finding a new place to come off each plastering time. I have seen some of these old houses remodeled, and they are indeed wonderful. So, too, was the cost of remodeling. But it is of the house that is neither nicely old-fashioned nor new-fashioned, that I would speak.

Last year my neighbor set out to improve her dining room in such a house. It was a rather hopeless room except for one thing—it was large and airy. The room is fifteen feet square, and it is such a long way to the ceiling that one seldom tries to look that high. The woodwork was much in need of refinishing, and the windows were narrow and tall, and not old-fashioned enough to be new-fashioned. There is no fireplace or built-in furniture to break the wall spaces.

But my neighbor is ingenious. First, she had the room repapered two-thirds of the way up the walls with plain, heavy, blue paper. From there to the ceiling she used a light blue-gray flowered paper, with a small blinding strip to join them. The ceiling was papered with pearl white paper.

Then the woodwork was given a fresh coat of varnish. The edges of the floor had been finished once, but needed a new coat of paint and varnish. A blue fiber rug was purchased for the center of the floor, and the most used places were covered by blue and white rag rugs, braided or woven. The windows were given new shades, and the curtains were hung so as to come well out each side of the window, which make the windows look wider, and thus make the room look less high and barn-like. The curtains are of plain white scrim, hemstitched, and edged with a narrow crocheted lace that has a final row of blue just the color of the wall paper. The curtains come just below the window sill.

When the room was finished to the last bit of rubbing up the finish of the furniture, I was surprised at the difference. The room that had been such a hodgepodge before and so dreary looking, is now really cozy and restful looking. It sent me home with ideas for doing something with my own rather hopeless dining room. My neighbor's dining room had cost her no more than if she had papered it with a figured paper that would have been out of place and had run the same paper clear up to the ceiling.—Mrs. Chester E. Lee.

DANDELIONS' FOOD VALUE

Because dandelions are thought of as weeds and are so common, many housewives who are seeking ways to vary the diet in the spring fail to think of the sprawly little plants as good food. And some who do use them as "greens" do not realize that there are many other ways in which they may be utilized. Here is a good recipe vouched for by the home economics workers at the New York Agricultural College at Ithaca.

Dandelion Soup.—One cup dandelion pulp, 1 tablespoon butter, 1 tablespoon flour, 1 cup milk, salt and pepper, yolk of hard-boiled egg. Make a white sauce and add to it the dandelion pulp. Just before serving the soup add the yolk of an egg, which has been pressed thru a sieve.

If a child frets and wants something out of regular feeding-hours, offer a drink of cool water. Even a nursing baby needs water occasionally.

PENNSYLVANIA FARMER PATTERNS
Give figures and letters of each pattern exactly as printed at beginning of each description or we will not be responsible for correct fitting of orders. Give bust measure when ordering waist patterns, waist measure for skirt, and age for children's patterns. Address Pennsylvania Farmer, 261 S. Third Street, Philadelphia, Pa.

3531.—Dress and Sack for Child.—The pattern is cut in 4 sizes: 6 mos., 1, 2 and 3 years. A 2-year size will require 2 yards of 36-inch material for the dress, 3/4 yard for the sack, and 1/2 yard for the bonnet for which 1/2 yard of lining is also required. Lawn, batiste, nainsook, linen, crepe, voile, albatross and silk are attractive for the style here portrayed. Pattern, 10 cents.



3532.—Play Suit for Small Child.—The pattern is cut in 4 sizes: 4, 6 and 8 years. A 4-year size will require 2 1/2 yards of 36-inch material. Crash, drill, gingham, pongee, poplin, repp, chambray, lawn, percale, flannelette, serge and crepe may be used for this design. If desired the smock may be closed on the shoulders. Pattern, 10 cents.

3533.—Popular One-piece Dress.—The pattern is cut in 4 sizes: 4, 6, 8 and 10 years. A 4-year size will require 3 yards of 27-inch material. Serge, plaid suiting, gingham, kindergarten cloth, galatea, poplin, pongee, repp and linen are good for this model which makes a very becoming school dress. The sleeve may be in wrist or elbow length. Pattern, 10 cents.



3534.—Charming Dress for Mother's Girl.—The pattern is cut in 4 sizes: 4, 6, 8 and 10 years. A 6-year size will require 1 1/2 yard of 27-inch material for the gulf and 3 yards for the dress. The model may be of one material or of a combination. Silk and serge, velvet and taffeta, linen and gingham are good combinations. The gulf may have short sleeves and the puff on dress sleeve may be omitted. Pattern, 10 cents.

Distinguish between warm and cold colors when choosing wall coverings. No dark room should be made gloomy with grays or deep blues, and bright tans may be distressing on the walls of a sunny room.

Pastry shells made of leftover pie crust and filled with creamed meat or vegetables add a wonderfully festive touch to a Sunday night supper.

In package goods, don't forget that you pay for the carton, but remember that you are paying for cleanliness too.



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The Quakertown Stove Works
Quakertown, Pa.

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Markets

PHILADELPHIA PRODUCE

Phila., April 11, 1921.

The market on old potatoes continues slow and dull, and while some potatoes are being sold up to \$1.10-1.15 per cwt. most of the Penna. potatoes are being sold around \$1 per cwt. and some as low as 75¢ per cwt. One car of New York state potatoes in 150-lb. sacks sold here this morning at \$1.85 sack. There is no change in the price on the nearby 3/4-bushels, handled in by the nearby farmers which are selling at 50¢-50c per bushel, mostly around 40¢. The season on new potatoes is now well under way. No. 1 new potatoes sold here this morning at \$8.00 bushel, with No. 2s at mostly \$6 with some at \$5.50 bushel. Southern sweet potatoes are lower at \$1.60-1.75 bushel, on primes with No. 2s at 80¢-85¢. Nearby New Jersey sweet potatoes are firmer on No. 1s which sell at \$1.00-1.05 per bushel, on fancy with poorer at \$1.25-1.35. Mediums are easy at 75¢-80¢ per bushel, and No. 2s are lower at 70¢-75¢ per bushel.

Vegetables—Artichokes are more plentiful and easier at 50¢-60¢ box. Western asparagus sold all the way from 30¢ up to 60¢ bunch, with southern from 25 to 50¢. The Maryland which is just starting sold from 40¢-50¢ per bunch, and the New Jersey ranged all the way from 25¢-75¢ per bunch. The cold weather and snow storm of the morning however will not set the New Jersey asparagus back for a short time. Beans are in light supply and firm at \$3.00-3.50 bushel. Green beans are scarce and higher, selling this morning at \$1.50-2.25 bushel. The market is very firm on cabbage which sold this morning at \$2.50-3.00 bushel, while half hampers sold at \$2.75-3.00 bushel. There was a car of old carrots here this morning which sold at \$3.50-4.75 bushel. Fancy nearby carrots are extremely scarce and such as were here bring \$5 per bushel, or better. New carrots sold here this morning at 50¢-60¢ bushel, and sales are being made around \$2.25-2.50 per bushel. There were about 12 cars of cucumbers here this morning and under these cucumbers the market declined so that fancy sold at \$2.50-3.50 bushel and choice at \$1.50-2.50 bushel. Eggplants are very scarce and fancy when here will bring \$5-5.50 per crate, with the poor ones selling lower to condition. One car of Baltimore kale sold at \$1.00-1.25 per bushel. Lettuce is firmer selling at \$1.00-1.50 per bushel, with poor down to \$2.50-3.00 bushel, although an occasional extra fine lot sells up to \$1.75. Old onions are about steady at \$1.00-1.25 per bushel, while new onions are more plentiful and easier at \$1.50-2.50 per bushel on yellow with white, selling up to \$3 per bushel. Peas are lower under heavier supplies and \$3.00-3.50 per bushel. The market is bare of fancy peppers. There were eight cars of Norfolk radishes here today and the poor condition and sales ranged from 75¢ per bushel to \$1.75 per bushel, on red radishes and 50¢-55¢ per bushel on white radishes. Penna. rhubarb was plentiful and sold at 30¢-35¢ per bushel. Romaine lower at \$1.50-2.25 per bushel. Nearly scallions less plentiful and market declined to \$1.00-1.50 per bushel. Tomatoes in light supply and higher at \$3.50-6.50 per bushel, fancy and \$4.00-6.75 per bushel on choice. There were 9 cars of Norfolk spinach here this morning, the best sold at \$2.50 per bushel but some of it was poor and sold at \$1.00-1.75 per bushel. Watercress is in light supply and higher at 30¢-40¢ per bushel. A few Eastern spring beans are still arriving and selling around \$1.65-1.75 per bushel.

Fruit—Apples are in fair supply for the season of the year, there being fourteen fresh cars offered today and some in very poor condition, and the condition of the apples now show a very wide range, prices are accordingly taking an equally wide range. Ben Davis, 20¢-25¢; Golden Wonder, 20¢-25¢; Ben Davis, 20¢-25¢; Greening, 20¢-25¢; Wines, in barrels, \$1.75-2.00; also various other varieties in poor condition, sold at 20¢-25¢. Apples in basket lots, Ben Davis, \$1.25-1.50; Ben Davis, \$1.15-1.35; Greening, 85¢-1.10.

There were four cars of North Carolina Strawberries here this morning, the first of the season having reached here last week. The berries today showed a wide range in condition, some being soft wet and moldy, while some were in good condition. Best today at 30¢-35¢ per quart, while poor and moldy ones sold as low as 10¢-20¢ per quart. Pineapples are a little more plentiful and are selling mostly from \$2.00-2.50 per box, and 25¢-30¢ per fruit from \$1.50-2.50 per box.

Poultry—Since our last week's report the market has eased off somewhat on live poultry, and at this writing the market is running about steady as follows: Fowl's fancy, 30¢-35¢; medium, 30¢-35¢; broiling chickens, 50¢-55¢; young roosters, 25¢-30¢; ducks, 30¢-40¢. Dressed poultry is about steady as follows: Fowls, 30¢-40¢; roosters, 25¢-30¢.

Eggs—The market on eggs opened up the week at prices which showed a marked change from the closing prices of last week, which are as follows: Penna. and other nearby current receipts, 27¢; fancy firsts, 28¢; fancy selected nearby, 30¢-37¢; southern eggs, 25¢-25¢; Western firsts, 20¢-26¢; Western extra firsts, 27¢-27½¢.

LANCASTER PRODUCE

—April 9, 1921.

Eggs sold at 20 cents a dozen at the opening of market this morning but trading was so brisk at this price that late coming light on a gradually ascending scale until at the close the few eggs still on hand at the stalls were being offered at 28 cents. The first of the season was in evidence this morning and sold for five cents a small bunch. County grown asparagus brought from 15 to 25 cents a bunch and watercress from 15 to 25 cents a bunch and five cents a pound. Local farmers are now offering plentiful

Pennsylvania Farmer

April 16, 1921

PITTSBURGH HAY AND GRAIN

—April 9, 1921.

Demand for hay only fair. Receipts seem fully equal to same. Somewhat difficult to place arrivals, only of the better grades. It is necessary to make reductions in order to effect sale of poor stock. Clover and heavy clover mixed hay not wanted. Light mixed hay will sell but alfalfa and prairie hay unsalable.

Straw receipts light with a good demand. Market fair and steady. Oats, car corn and shelled corn are difficult to place, the arrivals being in excess of the demand.

Hay—No. 1 timothy, \$24.50-25.00; stand and timothy, \$23.00-24.00; No. 2 timothy, \$21.00-22.00; No. 3 timothy, \$16.50-18.50; No. 1 light clover mixed, \$21.00-22.00; No. 1 clover mixed, \$20.00-21.00; No. 2 clover mixed, \$14.00-16.00; No. 1 clover, \$20.00-21.00.

Straw—No. 1 oat straw, \$15.00-16.00; No. 2 oat straw, \$12.50-13.50; No. 3 wheat, \$15.50-16.50; No. 2 wheat, \$15.50-16.50; No. 1 rye, \$16.00-17.00; No. 2 rye, \$15.50-16.50; No. 2 white oats, 45¢-45½¢; No. 2 yellow ear corn, 75¢-77¢; No. 2 yellow shelled corn, 69¢-70¢.

Butter—Receipts, 1946 tubs. The usual Saturday quietude prevailed in this market, but prices were steadily maintained under small supplies. Western butter, solid packed creamery, fancy high-scoring goods, 51¢-53¢, the latter for jobbing sales; extras, 50¢; extra firsts, 48¢-49¢; No. 1, 47¢-48¢; No. 2, 46¢-47¢; No. 3, 45¢-46¢; No. 4, 44¢-45¢; No. 5, 43¢-44¢; No. 6, 42¢-43¢; No. 7, 41¢-42¢; No. 8, 40¢-41¢; No. 9, 39¢-40¢; No. 10, 38¢-39¢; No. 11, 37¢-38¢; No. 12, 36¢-37¢; No. 13, 35¢-36¢; No. 14, 34¢-35¢; No. 15, 33¢-34¢; No. 16, 32¢-33¢; No. 17, 31¢-32¢; No. 18, 30¢-31¢; No. 19, 29¢-30¢; No. 20, 28¢-29¢; No. 21, 27¢-28¢; No. 22, 26¢-27¢; No. 23, 25¢-26¢; No. 24, 24¢-25¢; No. 25, 23¢-24¢; No. 26, 22¢-23¢; No. 27, 21¢-22¢; No. 28, 20¢-21¢; No. 29, 19¢-20¢; No. 30, 18¢-19¢; No. 31, 17¢-18¢; No. 32, 16¢-17¢; No. 33, 15¢-16¢; No. 34, 14¢-15¢; No. 35, 13¢-14¢; No. 36, 12¢-13¢; No. 37, 11¢-12¢; No. 38, 10¢-11¢; No. 39, 9¢-10¢; No. 40, 8¢-9¢; No. 41, 7¢-8¢; No. 42, 6¢-7¢; No. 43, 5¢-6¢; No. 44, 4¢-5¢; No. 45, 3¢-4¢; No. 46, 2¢-3¢; No. 47, 1¢-2¢; No. 48, 0¢-1¢; No. 49, 0¢-1¢; No. 50, 0¢-1¢.

Butter—Country, 50¢-55¢ lb.; separator, 55¢-60¢ lb.; milk, 10¢-12¢ lb.; dressed, 12¢-15¢ lb. each.

Vegetables—Potatoes, 50¢-100¢ lb.; 45¢-60¢ lb.; lettuce, 10¢-15¢ lb.; loose, 5¢-10¢ lb.; cabbage (southern), 40¢-50¢ lb.; 30¢-40¢ lb.; onions, 30¢-40¢ lb.; lima beans, 20¢-30¢ lb.; corn, 10¢-15¢ lb.; 15¢-20¢ lb.; 20¢-30¢ lb.; 30¢-40¢ lb.; 40¢-50¢ lb.; 50¢-60¢ lb.; 60¢-70¢ lb.; 70¢-80¢ lb.; 80¢-90¢ lb.; 90¢-100¢ lb.; 100¢-110¢ lb.; 110¢-120¢ lb.; 120¢-130¢ lb.; 130¢-140¢ lb.; 140¢-150¢ lb.; 150¢-160¢ lb.; 160¢-170¢ lb.; 170¢-180¢ lb.; 180¢-190¢ lb.; 190¢-200¢ lb.; 200¢-210¢ lb.; 210¢-220¢ lb.; 220¢-230¢ lb.; 230¢-240¢ lb.; 240¢-250¢ lb.; 250¢-260¢ lb.; 260¢-270¢ lb.; 270¢-280¢ lb.; 280¢-290¢ lb.; 290¢-300¢ lb.; 300¢-310¢ lb.; 310¢-320¢ lb.; 320¢-330¢ lb.; 330¢-340¢ lb.; 340¢-350¢ lb.; 350¢-360¢ lb.; 360¢-370¢ lb.; 370¢-380¢ lb.; 380¢-390¢ lb.; 390¢-400¢ lb.; 400¢-410¢ lb.; 410¢-420¢ lb.; 420¢-430¢ lb.; 430¢-440¢ lb.; 440¢-450¢ lb.; 450¢-460¢ lb.; 460¢-470¢ lb.; 470¢-480¢ lb.; 480¢-490¢ lb.; 490¢-500¢ lb.; 500¢-510¢ lb.; 510¢-520¢ lb.; 520¢-530¢ lb.; 530¢-540¢ lb.; 540¢-550¢ lb.; 550¢-560¢ lb.; 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Standing Stone

An Indian Legend of Northern Pennsylvania

By
ABLETT
LINCOLN
FLURY

ATTRACTED by the cheerful glow of the campfire before the door of the Moravian Mission, Brown Bear wandered toward it. He joined the circle seated around the White-Father-of-the-Chapel who was teaching his converts. Brown Bear did not profess Christianity but came out of simple curiosity to hear the doctrine that had changed the lives of many of his tribesmen. Under the influence of the new gospel many of them forsook the warpath, fighting only to defend themselves when attacked. This peculiar transformation mystified him.

"Love thy neighbor as thyself. Do good to them that ill-treat you. Love even your enemies for they sin against you thru ignorance just as you sin against your Heavenly Father. How often we forget and break His commandments! Yet he shows us with blessings. So we, too, must help with kindness those who would abuse us. Repay evil with good," preached the missionary.

The brave withdrew in disgust. That religion possessed no power. No victory could ever be gained by such gentleness. In his own mind, he was convinced that his enemy, the Medicine Man, needed something quite different to love. Because Brown Bear had accidentally broken a taboo, the Medicine Man had demanded all four of the brave's horses in payment for warding off evil spirits. Brown Bear considered the toll taken excessive, particularly as he recalled the night in the winter when he had rescued the Medicine Man from a hostile band of Indians who were about to carry off that dignitary.

"That," thought the brave, "is a sample of the reward of good deeds." Superstition alone prevented him from engaging in an open attack on the shaman. Revenge could be taken in a less direct way. Brown Bear returned to his tent where he rolled up in his blanket to catch a few hours sleep.

About 2 A. M. he arose and slipped from his tepee. The twinkling stars, high above the clouds in the mackerel sky, gave him just enough light to pick his way. The moon had gone down earlier in the evening. Before him, the majestic Susquehanna, in a serious mood, swept by grandly and smoothly. Slightly ruffling the river's serenity just above the encampment was the entrance of Wyalusing Creek. Brown Bear, however, turned down the river to a place where all the tribe's horses, under a communal custom, were hobbled. Moving with the absolute quiet that only an Indian can achieve, he discovered the sentry sitting with his back against a tree, his head resting forward on his doubled knees.

Gliding stealthily among the horses, the brave separated three of the hobbled animals from the rest. Apparently he had decided beforehand just which horses he wished, for he returned one of the three and selected another to take its place. The hobbled horses traveled slowly but the Indian made no endeavor to hurry them. Even the crickets in the field, undisturbed by his cautious steps, continued their chirping. Anyone, seeing the horses grazing as they traveled, would have inferred that they were only straying in search of fresher pasture.

When he estimated that the horses were far enough from the sentinel not to wake him if they should whinny, he removed the ropes that bound their feet. Using these as halters, he leaped upon one of the horse's backs and led the other two. Several streams that required fording and the mountains, compelled him to travel first away from the river, then toward it, always, however, moving upstream.

Shortly after daybreak, he beheld the village of Towanda in its before-breakfast activity. The smoke of newly kindled fires was visible before several of the tepees where some of the squaws were lighting fires; others were carrying water in earthenware jugs and cooking. Continuing straight into the heart of the village,



These pictures show some of the results of a wind storm that swept thru West Bradford Township, Chester County, Pa., one day last month. It ruined this barn, which, fortunately, was insured. Farther up the valley a village was practically leveled, many people being left destitute.

Brown Bear stopped only when he reached the most ornamented wigwam. Few of the squaws turned their heads to look at him. When he drew up his horse before the tepee a maiden wearing an eagle's feather in her hair looked up at him from the kettle she was stirring. She smiled and was about to take a step toward him, but her Indian stoicism prevailing, she turned again to her task. By the time he had dismounted, Brown Bear beheld the Chief facing him. No greetings were exchanged.

"I have brought the horses I promised," the brave announced. "May you keep your promise as well."

The Chief spoke sharply to the maiden who still leaned over the fire. "Come, Eagle Feather," commanded the Chief. "This is your husband. When the sun is overhead, we will celebrate your wedding. Then you will return with your husband to his tribe."

Brown Bear pointed to the sky.

"A storm is gathering. It is not good that the brave and his bride leave her father's tepee in the rain. Let us have the ceremony now that we may travel down the river and reach our home before the storm breaks," urged the suitor.

The Chief glanced toward the cloud-hidden sky, grunted and shook his head in dissent.

"Manitou gave us the way to marry," declared the Chief. "We must not anger him by using his gift lightly."

Brown Bear realized the necessity of being on his way before his pursuer reached Towanda but he bowed to the Chief's decree. By noon, preparations for the ceremony were complete. In a mock chase, Brown Bear pursued Eagle Feather, captured her and bore her in his arms to her father. The Chief placed his hands upon their heads.

"Brown Bear," he began, "Eagle Feather is your bride. May Manitou mark your trail clearly thru the forests of life. Let us now feast and

Wasting no more time, he began walking around the field in a huge circle until he discovered the tracks of the missing horses. Turning, he raced back to camp, gathered up three cursing stones from his tepee, mounted a horse and galloped away.

Thru the woods and across the open fields he raced. Turning sharply to follow the foot-prints, backtracking several times fooled by the brave's wily scheme, calling down curses, and watching lest he should be ambushed. Early in the afternoon he ascended the mountain crest from which Towanda suddenly came into view. A clap of thunder, followed by a strong blast of wind, made him rein in his horse.

"Manitou is answering my prayers," he muttered.

A small object on the river attracted his attention. Shading his eyes with his hand, he distinguished Brown Bear and Eagle Feather in a canoe.

"Both of them shall die!" swore the Medicine Man.

Lashing his horse to a gallop, he tore down to the river's edge where he leaped from the animal's back to spring into a canoe. He believed his own life charmed; he could not drown. He would, however, have the satisfaction of seeing his victims' destruction.

The thunder claps began to come at short intervals, each report growing louder, echoing and re-echoing among the hills till they merged into one steady roar. The heavy clouds gathered closer and closer to the earth. Night fell in a heavy pall. Sharp flashes of lightning made the darkness seem deeper by contrast. The wind increased in violence.

The Medicine Man ceased paddling. All his exertions were devoted to steering. It was useless. The canoe, with but one person to burden it, was blown ahead with the current. Its speed was greater than he had hoped or anticipated.

"Manitou is with me," he shrieked. His words were hardly heard above the thunder's roar, even by himself.

The bridal canoe, weighted down almost to the water's edge, was less exposed to the wind. Consequently, it traveled only with the speed of the current. For the same reason, more care was necessary lest it should run upon a hidden rock. The Medicine Man's canoe would pass over rocks that might have spelled disaster to Brown Bear and Eagle Feather. A few drops of rain fell, followed in a few seconds by veritable sheets of water. The brave's canoe was in great danger of being swamped. Eagle Feather laid down her paddle so that she might bale out the water with her hands.

Startled by a cry from her husband, she looked up. The current was bearing them into an eddy at the base of a cliff. Ordinarily, it would have presented but little danger. Now, with the river lashed to foam by the wind and with the water pouring into the canoe, the small whirlpool would be sufficient to upset the craft.

There was one chance. Brown Bear might guide the canoe close to the outer edge of the whirlpool and then shoot into the smooth water just under the overhanging cliff. Once there, they would be trapped. But, during the remainder of the storm, would be safe. Nearer and nearer the whirlpool they drew. A dexterous twist of the paddle, requiring all the strength of the brave's powerful muscles, and the danger was past. He guided the canoe to

a favorable position where he could watch the river.

From the overhanging rock poured a torrent of rain. All the water that fell upon the face of the cliff was concentrated into this one stream. The wind caught it and blew it about as it fell thirty feet to the river. The brave and his bride were bathed in the muddy spray.

A shout from the river caused them to look in that direction. The Medicine Man in his canoe was feverishly paddling backwards. In his endeavor to avoid the whirlpool, he had gone too far toward the other shore. He was now caught upon a rock in the shallow water.

He was unable to free himself. Soon the force of the current, combined with the strength of the wind, would tear a hole in the bottom of the canoe. He contemplated leaping from his boat in an endeavor to walk ashore in the waist-deep water. He remembered, though, that the sharp rocks on bottom, inclined at all angles, would give him a very insecure footing. His balance once lost, the current would upset him and prevent him from rising. To swim thru the wind-stirred waves, with the blinding rain pouring upon him would invite death.

Realizing that his efforts were useless, he paused to rest. He caught sight of the bridal couple the instant they discovered him. Upon the face of the cliff the Medicine Man spied a flat, jagged-edged boulder, weighing about a ton. The rain had carried away much of the soil that held it. Here was his opportunity. "Ask Manitou only for the possibility,"

He repeated this maxim which he had learned early in his career. Reaching into the pouch at his belt, he drew forth his most treasured possession. It was a blue stone with three holes bored thru it. Thrice he rubbed it across his forehead, muttering to it. Rolling his eyes until the whites became prominent, he called for the boulder to crash down the cliff; to break the thin shelf that protected the brave and his bride.

So gradually did the rain carry off the supporting soil that the beginning of the huge rock's downward journey was almost imperceptible. Thru the downpour, it seemed as though the driving rain was playing a trick upon the senses.

Slowly the speed increased, as the rock gathered force in its thousand-foot fall. A projecting surface raised one side so that the rock rolled instead of sliding. After that, it fairly bounded like some wild animal over obstructions that might have stopped it when sliding.

The Medicine Man raised the tone of his incantations. He rocked to and fro. His mutterings grew into long protracted cries and walls. Suddenly, he stopped. The emotional frenzy left him. He stared horror-stricken upon the rolling rock. Five, ten, fifteen feet into the air it leaped, rejoicing in its temporary freedom. Its jagged edge, bumping against the unevenness of the slope down which it rolled, tossed it away from the cliff.

It described a huge arc thru the air, curving far out over the river. The Medicine Man yelled as he sprang from his canoe. But too late!

A splash that sent the water of the river upward to fall again mingled with the rain; a crunch as the rock of the river bottom met the falling rock; the location of the Medicine Man and his canoe was marked only by the upright boulder wedged

firmly in the river bottom, known to this day as Standing Stone. He and his boat were buried beneath it forever. Never would the Medicine Man learn the joys of the Happy Hunting Ground. The storm raged for several hours. When it subsided, Brown Bear and Eagle Feather were still afloat.

"We will go to the White-Father-of-the-Chapel," the brave said to his bride as they continued their journey down the river. "I thought hate could win, but now I have seen Manitou punish the Medicine Man with a curse of his own making."

"Let us be married according to the White Father's way for he can teach us love; if we know how to love one another, Manitou's love will shelter us."

To this day, those who travel to Towanda will still see the rock that fell from the cliff, standing edgewise to the Susquehanna's current. And I have told the true story of how it got there.

THE VALUE OF A SMILE

The thing that goes the farthest Toward making life worth while That costs the least and does the most,

Is just a pleasant smile The smile that bubbles from the heart

That loves its fellowman Will drive away the clouds of gloom And coax the sun again It's full of worth and goodness, too, With human kindness blent— It's worth a million dollars And it doesn't cost a cent.

There is no room for sadness Where we see a cheery smile; It always has the same good look— It's never out of style; It nerves us to try again When failure makes us blue; The dimples of encouragement Are good for me and you; It pays a higher interest, For it is merely lent—

It's worth a million dollars And it doesn't cost a cent. A smile comes easily enough. A twinkle of the eye Is natural and does more good Than any long-drawn sigh! It touches on the heart strings Till they quiver blithe and long, And always leaves an echo That is very like a song. So, smile away! Folks understand What by a smile is meant; It's worth a million dollars— And it doesn't cost a cent! —W. B. Nesbit, in Erie Co., N. Y. Farm and Home Bureau News.

DISPOSSESSED

At a ball game between a South Carolina negro team and a visiting team of similar color a negro preacher was acting as umpire. The pitcher had gone rather wild and had permitted all the bases to fill. Another man came to the bat and the nervous pitcher shot one over. "Ball one," yelled the ump. The pitcher tried again. "Ball two!" was the decision. Another effort by the hurler. "Ball three!" said the umpire. The pitcher saw his predicament and made one master effort to save the day.

"Ball four!" yelled the ump, "and the man's out!" "How come, I see out?" inquired the enraged batter.

"Is repelled to put you out, nigger. Don't you see dar's nowhere else to put you?" reasoned the umpire.—Columbia (S. C.) State.



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(Signed) GEORGE W. SMITH.

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(Signed) MRS. M. A. GIFFORD.

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3213, 3215, 3217,

A HAND-MIXING FERTILIZER PLANT

(Continued From Page Three).

excessively high price for slowly available organic, nitrogenous materials. This does not mean that the organic nitrogenous materials should not be used in fertilizers; indeed as by-product and waste materials they form a valuable source of nitrogen and should be utilized to the fullest extent possible. However, long-time experiments have abundantly demonstrated that they are not as efficient in crop production, pound for pound of nitrogen, as the mineral nitrogenous materials. Experiments have shown that crops cannot recover as high a percentage of the nitrogen from these organic materials as is recovered from nitrate of soda and sulphate of ammonia. It is therefore, unjust that nitrogen in the organic form should command a higher price than the nitrogen in the readily available nitrate and ammonium compounds. When the organic materials can be sold at a price commensurate with their crop producing power as compared with the readily available mineral materials, then they should be used freely. Until that time the cheaper and more readily available forms of nitrogen should be used where it is possible to do so, without sacrificing the mechanical conditions of the mixture.

Chamberlain & Barclay are meeting a real need in their community. Many farmers want a fertilizer of known composition with reference to the actual materials that go into its makeup, but do not care to be bothered with doing their own mixing. This firm has met the need. Their factory is open to everyone. Farmers can go at any time and see just what is being used and how it is prepared. When they drive up to the plant to load their wagons, they know just what they are getting and know also that it is adapted to their soil and crop conditions.

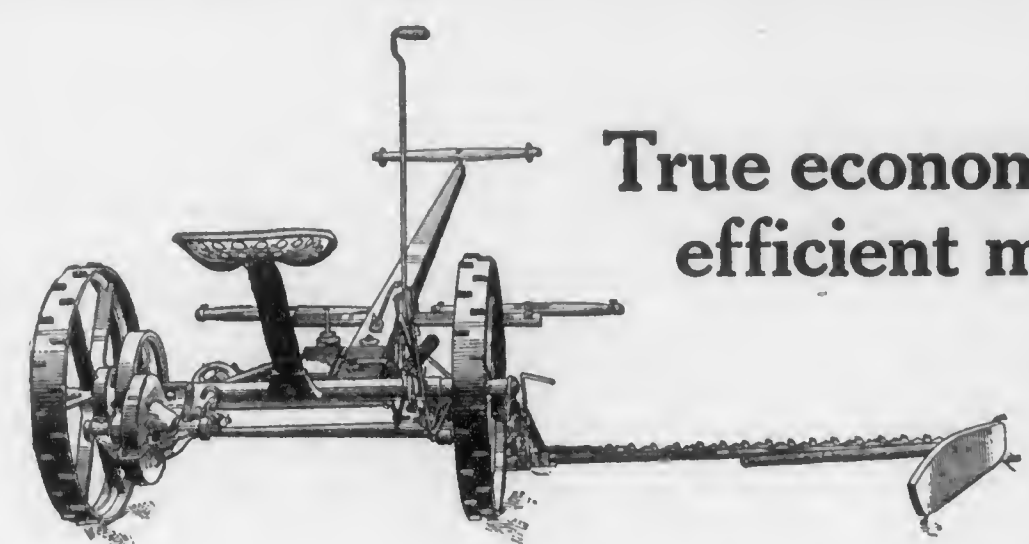
Acid phosphate is bought in bulk and unloaded by wheelbarrow; other materials are bought in bags. The mixing is all done by hand in ton batches being passed thru large screens as indicated in the photograph. After it has been shoveled over twice it is thrown on the ledges of the pile which serves to further mix it.

At the time the photograph was made, December 7, 1920, there were something like 2,000 tons already mixed, and large quantities of raw materials on hand. Much of this has already been sold.—A. W. Blair.

LABOR FROM HOLLAND

The offer of the Commissioner of Labor and Industry to find Holland farmers for the farmers of Pennsylvania, has caused many farmers to immediately make application for experienced, responsible and reliable tenant farmers, and they are offering special inducements to good men with families. The State employment bureau at Altoona has, at the present time, applications for twelve Holland farmers, from the leading farmers in that district, and in all probability within the next few weeks there will be an increased number of applicants for this class of men. There are now openings for single men on farms as well as a number of untenanted farms in the district.

Milk is a splendid food, and practically a complete food in itself.



True economy calls for efficient machines

International hay machines cut operating costs

WAS there ever a time when to get maximum production with the smallest possible expense was so necessary as now? How are you going to do it? Probably your biggest problem is labor. Labor is hard to get, and expensive when you get it—too expensive to use at keeping worn-out equipment on the job. Efficient machines are cheap. International hay machines are efficient—their long, unbroken record of dependable field service proves their worth.

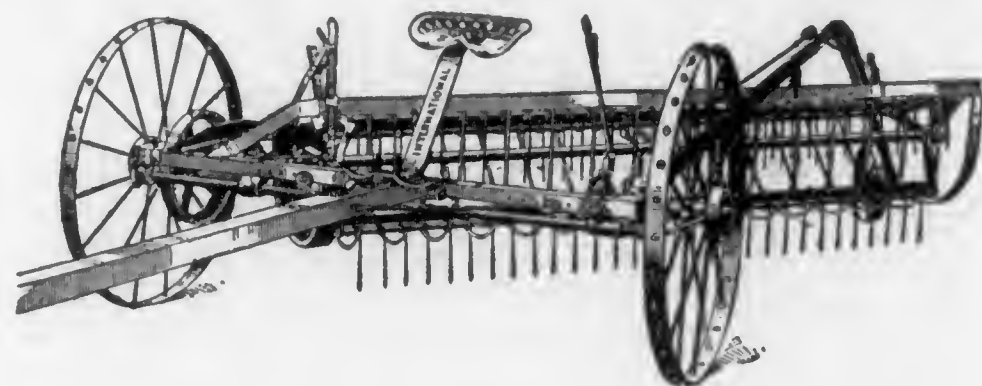
Therefore you make a true investment when you buy International hay machines. They save labor and time, both of which are especially valuable just now. While you are still busy with the hay, grain harvest

is nearly always at your heels. You wonder how you are going to get your hay out of the way. Do it with efficient machines.

You know your own problems better than anyone else, but, whatever they are, there are machines in the International Harvester line that will put your hay where you want it, the way you want it, in the quickest, most economical way.

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For treatment of Rheumatism, Sprains, Neuralgia, Lumbago, Sore Throat, Stiff Joints, Cuts and Bruises it is invaluable. \$1.75 per bottle at druggists, or sent by parcel post on receipt of price. The Lawrence-Williams Co., Cleveland, O.

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—land equal to that which through many years has yielded from 20 to 45 bushels of wheat to the acre—grazing land convenient to good grain farms at proportionately low prices. These lands have every rural convenience: good schools, churches, roads, telephones, etc., close to live towns and good markets.

If you want to get back to the farm, or to farm on a larger scale than is possible under your present conditions, investigate what Western Canada has to offer you.

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PHILADELPHIA, PA., SATURDAY, APRIL 23, 1921

75 Cents per year

Short Cuts With The Corn Crop

Methods Employed in Growing and Harvesting our Most Important Cereal

By C. F. PRESTON

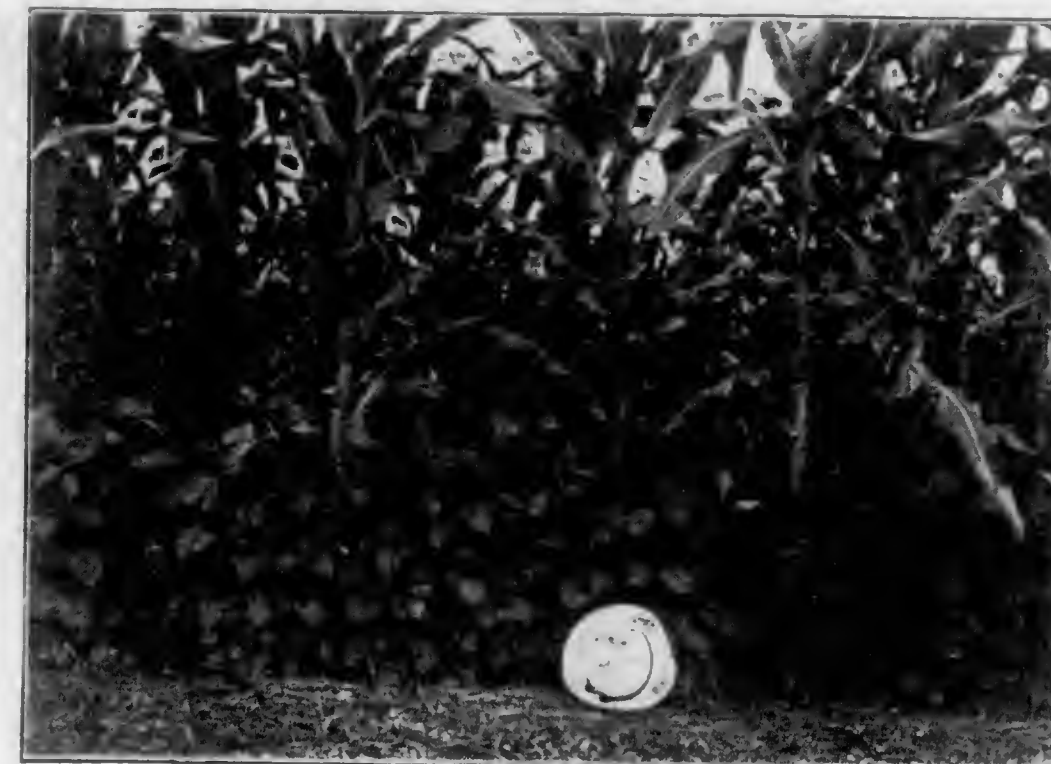
SO MUCH of our farming depends upon the success of the corn crop that each grower will do well at this season to studiously consider those methods which, if adopted on his particular farm, will insure maximum return in keeping with good farm practice. With corn selling at starvation prices—corn that was grown with the highest priced fertilizer, machinery and labor on record, the thoughtful farmer is turning over in his mind the problem for 1921, namely how shall he prevent the cost of production from overtaking if not greatly surpassing the market value of his crop, for every bushel is sold, if not for cash then to animals on the farm and subsequently marketed in the form of livestock or livestock products. Lowering producing costs while not an overly popular theme is none the less our main problem for study.

Farmers have never been able to arbitrarily set prices and probably never will. The inefficient producer would demand a price sufficient to let him out on his enterprise regardless of methods followed and ultimate costs, a situation that would be manifestly unjust to the consuming public. You may say without due thought that producers of other commodities name their sale price and the public pays without question. Yes and no. Just for example let us take the mining of soft coal, a commodity for which there is always a market demand more urgent during the war period than at any other time, but just now a decided reaction has set in, the price has gone down and numerous mines are working on part time or have suspended operations altogether. Continuing let us say that the average price of soft coal at the mines has dropped from \$10 to \$2 per ton. The large operators working the heavier veins with plenty of cars, modern equipment and favorable location with respect to railroads find it possible to continue their output and sell at the new price. The small operator less favorably situated, working a lighter vein of coal and hampered in many respects finds he is unable to continue in business with profit and quits. If he were to attempt holding prices at their wartime level custom would immediately cease. He accepts the former alternative. This is only one example of what is going on in all industries and one class of workers is unfortunate in holding the view that others are able for any length of time thru organization, conniving or other means to establish and maintain prices of any commodity above actual values. And so it is whether the issue be coal or corn the inefficient producer is crowded out; it is simply an exemplification of nature's law of the survival of the fittest.

How then shall we lower unit costs as they affect the production of corn? Few figures are available to show what per cent of the total cost of raising a bushel of corn is represented by man labor exclusively but a hurried calculation convinces the writer that the average bushel of corn raised in his own state of Pennsylvania last year had a charge against it for man labor of not less



Early Cultivation Gives Corn a Good Start



Soy Beans Keep Down the Weeds in Corn and Add Protein

than fifty cents and this constitutes the biggest single item. We are speaking of average costs; not the lowest nor yet the highest. Frankly, man labor or in other words farm help cannot again be so highly paid to raise another big crop of still

lower priced corn in 1921. The farmer himself has been compelled to take heavy losses (the state department of agriculture in Pennsylvania estimates an average loss to the farmers of this state at \$434 for 1920), he has been obliged to work for a greatly reduced income and by the same token those who labor for him must forget about the eight-hour, \$5 per day combination that could be imposed upon the employer for such special jobs as threshing and silo filling just a few short months ago. Costs may be still further reduced by the employment of short cuts in handling the crop. It is the purpose of the writer to show how, thru the adoption of certain methods, the three common practices of replanting, thinning and hand hoeing can be almost if not entirely stricken from the schedule. Crows, wire worms, heart worms and other well-known pests sometimes break up the uniformity of the stand but in the main these are minor points when compared with the failures in stand due to planting seed of unknown viability. The crow problem will not prove serious if one will but keep an appointment with his field during a few critical days and time the appointment at 4 A. M. His equipment will consist of a shotgun and a few shells. This supplemented by a little patrolling at odd hours of the day on the part of children will solve the crow problem. There are farmers who find satisfaction in constructing scare crows, devices which may fool the farmer but rarely if ever the crow. The worm problem is more difficult of solution but injury usually occurs in areas and my observation is that where serious, practically every plant in an area is ruined and drilling corn at the rate of one grain every six inches would not overcome this situation. The real and principal cause of poor stands of corn is poor seed. This is incontestable. It requires a long time for some of us to overcome certain delusions to which we cling with utmost tenacity but the farmer who nowadays asserts that he can tell whether or not corn from ears will grow by simply looking it over gains for himself the unfavorable estimate of his better informed neighbors. To be sure, anyone recognizes a mouldy ear at sight but mould is not the only cause of sterility in seed corn, and the obscure factors are brought to light only thru the germination test.

Too many hold the view that the germination test is merely a fad suitable for a schoolroom exercise in the study of agriculture but the sooner the practice becomes general the sooner will we be able to reduce the now common practices of replanting and thinning and the sooner will expenses go down and yields up. Ask the sawdust (Continued to Page Eight).

Attracting Consumers to the Farm

The Story of a Delaware County Farm's Solution of its Marketing Problem

By WILLIAM J. WATTS

IT IS generally conceded that farm producer and city consumer are too far apart in their common interests. They are standing afar and beckoning to each other while between them lie the barriers of disorganization, speculation, commissions, and costly handling from dealer to dealer. The people of both classes have accepted the condition as one to be suffered except in a few cases where under necessity they have arisen to the occasion, as in Delaware County, Pa., where "Black Horse Farm" is located and where the consumers are awake and have hearkened to the call of the producer.

"Black Horse Farm" is located on the historic Baltimore Pike about fifteen miles southwest of Philadelphia and also at the intersection of another main highway. It is not only in a progressive community but a continual line of touring cars and other conveyances pass the farm daily. The owner had thousands of bushels of apples to sell last fall and was confronted by the usual difficulties and the inadequate prices that are associated with the indirect ways of reaching the consumers. Consequently he placed a sign, "Apples For Sale," at the entrance of the farm drive, advertised in local papers, and most effective of all, convinced every roadside customer at first sight that his apples were the best to be found anywhere. The volume of business carried on would be astounding to anyone who believes roadside marketing is too bothersome or too trifling for the disposal of large quantities of produce. The consumers who benefited were convinced and returned time after time while other farmers saw the revelation of a market at their doors. The direct system of selling was adopted to avoid the difficulties that were partly permanent and partly due to war. Barrels jumped from 35c to \$1.50 or \$1.60 each while labor was almost prohibitive, and transportation was slow and costly, all combining to make an almost impossible price and still no profit to the producer. The plan reduced the handling to two parties, the grower and consumer. By the old method there were four or five operations and an equal number of additions to the final price. It was necessary to cart or truck the produce to the railroad, pay freight, remunerate a commission man, who again sold to a jobber or wholesaler from whose warehouse it must again be hauled to the retailer and again from store to consumer—four or five operations and costs which were in this case reduced to a single sale at the farm. The result was that the grower got about 20 per cent more for his apples than he was offered by the brokers and the consumer paid about half as much as by the other method. For example, apples that sold in the cities and towns for 25c to 30c a quarter peck or about four or five dollars a bushel were sold directly to households for from \$1.50 to \$2 a bushel. Apples that retailed from 75c to \$1 a dozen were sold at from 25 to 40 cents. The most beautiful Stayman Winesap tree ripened apples such as are rarely seen on the markets, due to cold storage stocks, sold at the rate of 40 cents a dozen. These differences explain why the consumers were willing to meet the grower at the farm.

It is practically certain that unless there is a quick change in the methods followed by dealers the farmers and the people they feed will find various efficient ways of getting together either at the farm gate or the city door. The city man who has a car is glad to combine pleasure and profit in his drives to the country if he knows exactly where to find choice fresh fruit, vegetables, eggs, butter, etc. Automobiles and roads are both improving and many a farmer as well as city man has awakened to business opportunities that did not exist a few years ago.

The most common criticism of roadside marketing is in regard to the annoyance to the farmer when he is at other work. If there is sufficient produce to sell, and the way of curing for customers is carefully systematized, this feature can easily be overlooked. At "Black Horse Farm" apples are handled in bushel hampers, all grading having been done at the orchards. The legal measure is at once recognized, no sorting is necessary in the presence and rush of the buyers and

also with lids fastened the same as for shipment or export little time is lost in caring for trade. On this farm apples are the chief item but while they are moving various other products are kept cleaned up. Cider is kept on tap in both kegs and jugs, fancy Leghorn eggs in convenient packages, potatoes also in bushel hampers, and many other products are kept in convenient form to be picked up and placed in a car. Many thousands of bushels of apples passed from the farm entrance in consumer's cars, or other conveyances. The people in charge had no complaint to make about annoyance by customers, and the business proceeded in much the same manner as a city wholesale produce market. The orchards are seventy miles away from the home farm so the fruit was transported on motor trucks in two hundred bushel loads. Six hours after the apples were taken from the orchard they were being picked up by the consumers. The storage rooms were kept in convenient order, different grades and varieties were in plain view and there were all kinds for all classes of buyers. Even a few prize selections were laid aside for the use of artists who want specimens for painting. The whole



In Southern Lancaster County, Where Silos Grow Tall. This One is 70 Feet High

system worked without anything noticeably irksome and no doubt the same plan with gift containers (in this case ten cents were allowed for a returned hamper), could be worked out on many more well located farms. There are today cheap containers and materials suited to the making of them for nearly every food product. Paper bags, cartons for eggs, butter, honey, etc., and crates or baskets of many kinds can be made or bought. Since most of the purchases are carried in passenger automobiles the convenience of the customer is of first importance. Few owners of touring cars relish the sifting of dust from potatoes in crates or open mesh bags, the possibilities connected with eggs in paper bags, or dripping honey packages.

"Black Horse Farm" was once the location of a famously hospitable roadside inn also known as the "Black Horse" but today the name known all thru the vicinity is not only associated with hospitality but a roadside market on a beautiful farm where all the old-time friendliness and solicitude for patrons is carried out so far as possible in helping people to get food at a price that pays for little more than its production. There is something about driving up to a substantial old farmstead, sipping a little cider, warming before a log fire after an exhilarating

drive, and sniffing the air of deliciously scented fruit storage rooms that prompts repetition.

It is a little taste of the farm life that nearly every man craves, and fortunately the best part of it is when the crops are ready for consumption, and we see the customers returning repeatedly. Anyway the outing to the country is enjoyed far more than a trip to a store. The owner of Black Horse Farm was asked why he did not rent a room in Philadelphia and get in the heart of the market and he explained the cost that would be added. There would be rent, cost of staying in town to attend the business, added distance in hauling, the disadvantage of scattered work and various other deterrents. Since it is not much of an inconvenience to most of his customers to reach the farm, many of them travel the road anyway, and since the volume of sale is sufficient there is no reason to contemplate a change of location. Several farmers in the same vicinity but with smaller farms have been heard to say they have sale for all produce at their property. This is an advantageous feature commonly mentioned when a farm is offered for sale.

The inconsistency of delivering farm produce grown just outside of the suburban districts to the center of a big city and dumping it on wholesale markets only to be taken back at great expense almost to where it started is apparent to anyone. If the crops from these nearest farms can be distributed by either producer or consumer or by the co-operative efforts of both the prices can be better suited to each, as demonstrated on Black Horse Farm. A general movement along this line should make the central city markets much more open and able to handle shipments from distant farms where direct methods are impossible.

WHEN YOU PLAN, PLAN BIG

When the War of the Rebellion came to an end, James M. Emerson found his way back home to a small hill farm in our neighborhood. It was then like a good many such farms on the hill; it never had made anybody very rich; but Mr. Emerson had a vision of what it might be made to do.

The way he set out about improving his farm was by keeping stock to the limit. He never had many cows, but he did have horses. He liked horses. He raised colts, and often he had more horses than it seemed as if he could keep, or had any need for. But he knew what he was about, all the same. The surplus he sold for fair prices. The colts had a way of growing up and they, too, made horses that other people wanted and were willing to buy and pay for.

And all the time those horses and cows were turning the hay and grain raised on the farm into more horses and more cows and leaving good-sized heaps of fine fertilizer for use on the place. It went there, too. I do not remember now that Emerson ever sold any hay off the place except what had been transformed into good farm animals.

For some years after we went on the farm we did not keep more than one horse and we changed work with Mr. Emerson to get our haying done. That gave me a chance to see what kind of hay grew on his farm; and I am within the bounds of truth when I say that I never saw such clover and timothy anywhere as he grew on that hill farm.

He had planned big in the beginning, but in one respect he could not foresee what was going to happen to his barn. It was far too small. He made it larger. I think he made two additions to the building and every time folks wondered what he was going to put in it. They found out after the crops were in, for the barn was crowded to the peak.

Planning usually comes out where we want it to, if we plan big, farms and barns are apt to be big accordingly.—E. L. V., New York.

The shortest way to do many things is to do only one thing at a time.—Cecil.

Experiment Stations as an Investment

Their Usefulness Increases as Agriculture Becomes More Complicated

By J. G. LIPMAN

Director N. J. Experiment Station

ANY opinions to the contrary notwithstanding, agriculture as an industry has moved forward at an amazing pace. The progress of the last fifty years has been speeded up, no doubt, by contributions which science has made in many directions. But even before science came to play a part in the advancement of the business of farming, far-seeing, clear-thinking farmers in all lands made substantial contributions by way of improved methods of farming. Chinese agriculture, by way of example, may be stationary rather than progressive. Yet we find the Chinese growing crops like rice, soy beans, millet and rape, all of them admirably adapted to meet the food needs of a dense population. Many men have evidently had a part in selecting and improving the wild plants to serve ultimately as important staple food crops. Thus we have an almost endless variety of soy beans and many varieties of other food crops. The Chinese long ago recognized the value of legumes for the maintenance of soil fertility. Methods of tillage, of irrigation, of plant propagation have all been developed without any direct help from science.

In the same way the intelligent inhabitants of Europe and of South America picked out certain wild plants and thru the centuries improved and developed them until they became important food staples. Thus we have our small grains, among them the wheats, barleys, rice, oats, the many types and varieties of Indian corn, the almost endless variety of vegetables, fruits, berries, etc. Also in dealing with domesticated animals many practical men displayed keen judgment and knowledge and helped to establish our valuable races of beef cattle, of sheep, of goats, dairy cattle, swine, horses, domestic fowls, etc.

When the natural sciences, among them chemistry, physics, botany and zoology, came to play a more direct part in the life of the city as well as of the country districts, a solid and broad foundation had been built by thinkers and workers whose names are now no longer remembered, but the fruit of whose work persists and will always live. On this foundation the building of the super-structure has been rather rapid. Chemistry has shown us the secrets of plant nutrition. We know now much about the composition of soils and plants, about the chemical transformations that take place in both of the part played by invisible organisms in the feed of crops, about the sources, composition and value of manures and fertilizers. Thanks to the development of physics and mechanics, we have been able to harness the energy of coal, of petroleum, of the wind and of the moving waters. The gasoline engine has come to play a large role in the everyday affairs of the farm. The great network of our railroad systems, our highways, our canals, the rolling stock of the railroads, the trucks, the tractors and the power-driven shipping are all of recent origin.

In the same manner we owe much to the investigations of the biologist and his contribution to the science and the art of nutrition. We have learned in consequence not only how to feed our domestic animals more economically and more effectively, but have learned to appreciate the value of different food constituents, of the proteins, of the carbohydrates, the fats and those other constituents which mean so much in helping the animal to assimilate its food and to maintain in their normal condition all the vital organs.

The entomologist and the plant pathologist have made their contribution in developing methods of protection against enemies that cause vast losses. Methods of seed treatment, methods of spraying and dusting are a powerful help in making agricultural production efficient. To the plant breeder we owe much for developing improved

varieties and types of plants and of pointing the way toward the establishment of races of disease-resistant species. To the bacteriologist and pathologist we owe a great debt for having placed in our hands the knowledge of parasitic organisms, of the ways in which these enter and develop in the animal body. They have told us much about immunity and resistance to disease and have laid the foundation for developing artificial resistance to disease. Many diseases formerly very destructive are no longer as troublesome, as, for instance, hog cholera, glanders, anthrax, foot and mouth disease, etc.

As the natural sciences were developed constantly new applications were found. In commerce, in the industries, in transportation, in the home, scientific investigations and discoveries came to be felt. It was recognized soon after the middle of the last century, that agriculture, like the growing city industries, was badly in need of all the help it could obtain from the natural sciences. The recognition of this fact led to the establishment of experiment stations in Europe, France, the Scandinavian countries, Germany, England and Italy began to make important contributions to agricultural science. The farmers of Europe, recognizing the declining fertility of

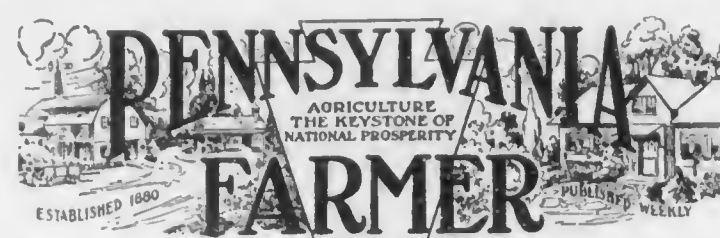
same may be said of variety studies, of improvement of plants by selection and breeding, of the introduction of new crops or of superior strains of crops already cultivated. Likewise, in the case of the feeding of animals, the breeding of animals, the housing of animals and the treatment of animal diseases, the experiment stations have rendered yeoman service. Any attempt to deal in any detailed way with the successful solution of special problems in special localities would be beyond the scope of this article. The readers of Pennsylvania Farmer will recall from their own experience many instances where science applied thru the investigations of the experiment stations in the United States, and in other countries, has served to modify in many essential respects the nature of our agricultural methods. Because of the application of the results of scientific studies and investigations the farmer's life of today as well as the farmer's methods of the present day are different from those of a generation ago.

All told, the American experiment stations have been a profitable investment. If properly supported they will continue to be a profitable investment. It is fortunate that, as the results of the investigations of station workers have accumulated, the need was recognized for making these investigations count more and more in the everyday life of the farm. Hence, there were organized extension departments thru whose different agencies, including the farm bureaus, the fruits of inventions, discoveries and investigations have been brought to the farmer or to the industries serving the farmer. The extension service has been liberally supported and has acquitted itself well in performing the work assigned to it. But, in our endeavors to strengthen our extension service, we have forgotten for the moment that there are many questions still unanswered. Many problems still unsolved. We have forgotten that the earlier investigations of the experiment stations have often dealt with the less difficult problems. The experiment stations have still much to do. In many respects their help is more badly needed now than it was a generation ago, since the business of agriculture has become more complicated. New insect and fungus enemies are constantly appearing. We must have methods for dealing with them effectively. The art of feeding farm animals has changed with the changing conditions in our social and industrial life. Animal diseases are more troublesome than they have been in the past. The introduction of new fertilizers, of new types of agricultural machinery, of mechanical power, have all introduced new and distinct problems that call for careful investigation. Farm management studies or the investigation of numerous problems relating to the farm home are as pressing in their nature as are some of the other problems. The scope of the activities of the experiment station should be widened to provide for a study of these and other problems. If the experiment stations have been helpful in the past, they can be made even more helpful in the future. It would be unfortunate, indeed, if, in our anxiety to strengthen the teaching in our long and short courses in agriculture, our farm bureaus, our home demonstration work or our club work, we forget that all of these rest on the foundation of investigational progress that can only be supplied by the experimental stations. We can not afford to forget that the American experiment stations are deserving of the best trained men and of the best equipment in order that their experiments and investigations may not be halted and that they may be permitted to explore the unknown and to hold up the hands of the farmer who is trying to adjust

(Continued on Page 16.)



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OUR JOB is to serve our readers. Whenever you are
puzzled, write to us and we will help you if we can.

—The Editors

Self Mastery is the essence of heroism.—Emerson

A Favored Section

EASTERN FARMERS are to be congratulated upon the fact that they are working under more favorable conditions than farmers in any other section of the country just at this time. While we do not believe in entertaining any feelings of exultation, yet the fact that they are close to good markets and sources of supplies in these days of almost prohibitive freight rates enables them to receive more for their products than do farmers in any other section of the United States. Farmers in the territory covered by Pennsylvania Farmer have close at hand millions of consumers who must have a daily supply of food and this food can be produced largely in the territory and delivered at little cost. Of course, prices are not what they should be but when compared with what is left to those who must ship hundreds or thousands of miles they are distinctly to the advantage of the Eastern farmer.

Itching Palms

ONE OF THE BEST things that could happen the human race would be a complete lapse of memory concerning prices, wages and profits received from 1915 to 1920. The desire of many retailers to continue gathering in the shekels at the rate obtaining in the halcyon days of the war is the greatest cause of stagnation in business today. In general, the wholesale prices of producers and manufacturers have been deflated far more than have the retail prices. The so-called "buyers' strike" is still on and goods are not moving except as necessity compels buying. President Harding in his message to Congress refers to this state of affairs in the following passage:

"Reducing cost of basic production has been recorded, but high cost of living has not yielded in like proportion. For example, the prices on livestock and grain have been deflated, but the cost of bread and meats has not been adequately reflected therein. It is to be expected that non-perishable staples will be slow in yielding to lowered prices, but the maintained retail costs in perishable foods cannot be justified."

This situation bears down heavily upon farmers, manufacturers and others whose products must pass thru one or more hands, because when trade is choked in the retail channels production must be reduced to meet the lessened demand or disaster follows. But up to this time "profit-taking" has not been defined, nor has any successful means of prevention been applied, except in a few instances. It is high time to forget there ever was such a thing as war profits.

Pennsylvania Farmer

"Caution in Co-operation"

THE MASTER of the National Grange in an open letter in the National Grange Monthly warns members of the grange to be cautious concerning many of the plans for farmers' co-operative enterprises now being promulgated. He does not specify which particular activities or movements he has in mind, but he deprecates the fact that such a great number are being launched, many of them built upon hopes and promises which he feels can never be successful. National Master Lowell says nothing that would lead us to believe that his caution is inspired by jealousy of other organizations, or that he has other than the best interest of farmers at heart. Taken at its face value, we are inclined to approve the letter of caution.

There never was a time when farmers had such a multiplicity of schemes presented for acceptance. Organizations are launched for almost every conceivable purpose, some of them for activities which are evidently outside the farmer's province and ability. Many of them have been tried time and again and always at a loss to farmers and a set-back to the work of legitimate organization. Every industry has its definitely set boundaries for its activities and it is a mistake to go outside of them. We have always argued that farmers' organizations should be devoted to social and educational improvement, economical production, and the promotion of business-like selling and marketing systems. These will cover the everyday needs and when it is desired to exert political influence concerted action can be secured thru federation. To the discouragement of over-ambitious, visionary schemes we say, Amen.

Opponents of Prohibition

WE DOUBT if it is worth while for temperance people and all lovers of good government to become unduly alarmed over the final accomplishments of the proposed national league to repeal the Volstead Act and possibly the Eighteenth Amendment. But it will be necessary to remain vigilant and active to offset the political influence which this organization proposes to wield. The reason which these misguided people give for wishing to repeal the prohibition law is that it is being violated, hence is should be repealed and thus save people from becoming law-breakers. The same logic might be applied to other prohibitory laws, such as those against murder, theft, arson, wife-beating, etc., all of which are broken every day. Would it not be equally desirable to repeal all such laws and save those who murder, steal, burn buildings or beat their wives from being law-breakers? These people are moving on the theory that breaking a law is, per se, more harmful than the commission of the act which the law seeks to prevent.

For some reason or other, most of the city papers continue to discuss the prohibitory law and its violation in a manner encouraging to violators and opponents of the law. During the war these same papers could not find language sufficiently strong to condemn those who opposed some of the national war measures. Is it possible that some Federal laws may be violated with impunity, and that aiding and abetting violation is sometimes a virtue? It would seem that some newspapers have this double standard.

The World's Labor Troubles

THE GREATER part of the printed labor news of the country is devoted to a discussion of unemployment and the necessity for reducing wages and makes little mention of the under currents of thought. For months there has been a persistent effort to bring about a reduction in wages from those paid during the past three or four years. Organized labor all over the world is making a strenuous effort to keep wages from going back to the pre-war level, and the re-establishment of the living conditions of that time. Labor's claim is that the cost of living has not been lowered sufficiently to meet the reduction proposed by employers.

Farmers have a vital interest in the income of the laborers of the world aside from the direct question of farm wages. They know that the

sale and market price of their products depends chiefly upon the ability of consumers to buy. They learned during the war that high prices were readily paid when people had plenty of money. For this reason thoughtful farmers are not in sympathy with the old-time conception of what a living-wage consisted, namely, merely enough to maintain an existence. On the other hand, however, they realize that if wages in the industrial world are too high and the hours too short the balance between country and city is upset and profitable farming becomes impossible.

It is just as well to face the facts as they exist today. The troubles of Europe are not confined to mere political revolutions. Just at this moment England is in more acute trouble internally than that she was at any time during the war. She is threatened with a complete tie-up of her industries because of the failure of the government and employers to make terms satisfactory to labor. Labor asks a share in the management of industry and a pooling of the profits.

We must not assume that because there is much unemployment in this country that we are past the danger of troublous times. The future will depend largely upon the outcome of the contest in England. If labor wins there we may expect a stiffening up of demands here. This situation viewed, in the light of the more or less concerted and nation-wide effort to reduce wages, should not be considered lightly. While we have no wish to cause alarm, we call attention to this world-wide struggle so that we may use our influence intelligently if occasion offers.

Who Will Pay the Piper?

ONE of the biggest questions confronting Congress is that of tax revision. For months there has been a persistent agitation, especially by the big interests, for "relief from burdensome taxes." There has been a universal demand by those who pay excess profits taxes that the law levying taxes on excess profits shall be repealed. The common people will demand that if this is done excess profits must go also. As a simple matter of justice Congress should see that every citizen pays his just share of tax and pays in proportion to his ability. But the country is being flooded with propaganda in favor of the sales tax idea which is to place a tax on every article sold. This would mean that consumers would pay all the tax. The poor man with a large family would pay more tax proportionally than a man having a small family. If it is possible to do it, it should be made impossible to pass the tax on from those most able to pay it to those least able to pay.

The expectation of being relieved from heavy taxes is childish and the desire to escape payment of a just share is unpatriotic. This country is under the necessity of raising between four billion and five billion dollars annually for an unknown period. This means a yearly tax of about \$40 on every man, woman and child in the nation. The great bulk of the people cannot bear such a tax and live decently and for this reason wealth rather than individuals must be made the basis for assessment.

But the national tax problem is no greater than that of state, county and local governments. Each of these in turn is finding it difficult to find sufficient money. It is so much easier to increase the assessed valuation and advance the rate than it is to find new sources. Corporations and big business raise a mighty howl and threaten to pull up and leave a state if increased taxes are levied. Usually, this is pure buncombe. It is no easier to move a coal mine, a railroad, or an oil well than it is to move a farm into another state. The real difficulty is that too many law-makers are loyal sympathizers with corporate property owners. Pennsylvania is just now having an object lesson on this subject.

In spite of the universal difficulty in finding enough money to fill the public treasuries, there is a continuation of the tendency to increase salaries and create new jobs. President Harding did well to emphasize the need for greater economy. Of course, public institutions must not be allowed to suffer, but it is time to stop filling pork barrels and creating political sinecures. There is need for the practice of thrift and economy by every branch of government, and since the com-

mon people will be compelled to practice these qualities as never before, they should see that public servants do likewise, or else turn them out to earn their bread by more arduous labor. The piper must be paid and all who danced must pay their share.

Our Washington Letter

The executive committee of the American Farm Bureau Federation and delegates representing thirty states held a conference in Washington during the week ending April 16.

Rural Credits.—In a discussion of rural credits, Commissioner A. F. Lever of the Federal Farm Loan Board gave his approval of the federation's commodity financing bill. Governor W. P. G. Harding of the Federal Reserve Board, told something of the workings of the Federal Reserve system. He said the profits of the system which this year will amount to \$100,000,000, should be used as a fund to enable the Farm Loan system to handle short time credits on cattle, grain and the like, and that this plan would work well in making effective the commodity financing bill. He also pointed out the necessity of re-establishing foreign trade, showing that the lack of trade with foreign countries caused products to be dumped in large quantities here.

Taxation.—The subject of taxation was discussed by Prof. T. S. Adams of Yale University, advisory expert for the Treasury Department. Mr. Adams said he believed in the income tax and that a breakdown of the income tax feature would be a tragedy. The present extreme rates he considered to be bad for the income tax feature. The surtaxes should be reduced and excess profits taxes wiped out. He warned the farm bureau people that the income tax system would go to smash if they insisted upon making it carry a heavier load than it could bear. Farmers can block a reduction of income taxes, but it will be a mistake to do it. The biggest danger to any tax system is an excessive rate. The excess profits tax should be repealed because it is not practicable. Mr. Adams wrote all excess profits tax legislation, and is convinced that it cannot be made to do what it was intended to do.

Mr. Adams said he was opposed to a general sales tax. It is a distinctly impossible tax. It would yield a large amount of revenue, but cannot be substituted for the income tax. It would not simplify our tax system, but would inevitably add to its complexity. He would substitute a five per cent corporation income tax for the surtax and excess profits taxes. There is no more chance of wiping out the income tax than in doing away with the tariff. The sales tax would be bad for business generally. Congress is continually besieged with people making applications for money. If it were shown that a new tax was popular, they would pass it and spend more money. It would not mean a lessening of other forms of taxation, but more money for Congress to spend. The worst enemies of the country are the men who invent new taxes, said the speaker. Nevertheless a great financial organization is spending a great deal of money in a propaganda to put the sales tax over.

In regard to the Ralston-Nolan land tax proposition, Mr. Adams said it would not be equitable, and he did not believe the Federal Government could carry thru any such assessment. He did not care to make further comment on this measure, because there was not the slightest chance of its getting consideration in Congress in the near future.

Tariff.—W. S. Culbertson of the Federal Tariff Commission addressed the federation on certain phases of the tariff which are of direct interest to the farmers. Mr. Culbertson emphasized the fact that we are now entering a period in which tariff duties on a number of leading farm products would help the farmers, and the producers are as much entitled to protection as any other class, nevertheless the impression received from his talk led to the belief that in so far as food products are concerned the consumers' interests will be given much consideration in arranging tariff schedules.

It was recommended that the equitable way to levy a duty on wool was on a scoured basis. It was pointed out that the duty on mutton was one case of the tariff being of direct value to the farmers. Enormous quantities of frozen mutton are being imported, last year's importations equalling one-fourth the amount of mutton produced in the United States. The cause of the enormous heavy importations of foreign products at this time was due to the fact that this is the only country in the world where these products can be sold for cash. Foreign shippers are rushing raw wool into the United States in vast quantities, although the stock already here is sufficient to last two years. The men who import wool and hold it will get the benefit of the tariff.

The necessity for legislation to protect the dairy industry in this country from Oriental vegetable oils was mentioned, but this situation cannot be wholly remedied by a tariff as practically all the copra imported into the United States from which vegetable oils are made to a large extent, comes from the Philippines, a part of our own territory that would not be affected by a tariff.—Elmer E. Reynolds.

Pennsylvania Farmer

HARRISBURG LETTER

Legislation Jammed.—At this writing most of the big bills of the session have gotten into a jam, but the Sproul adherents have some powerful means to produce a breaking of any attempted tie-up because of the Governor's power to reduce appropriations. The pocketbook nerve is very sensitive and the charity that gets a state appropriation still looms large in the view of the average legislator. While the revenue raising bills are occupying the Department of Welfare convention and the Department of Welfare measures are being shot at the appropriation bills are going right along and if the Governor escapes the fate of other Governors in having to reduce appropriations left by the departing legislators he will be lucky.

Progress of Legislation.—The Legislature has passed bills worth while in the measures to control sale of seeds; to require assessors to collect agricultural data; to stiffen up penalties for falsification of horticultural laws; to enable eradication of thistles and other weeds by raising the limit of pay and by various minor agricultural steps, but what will be the record in regard to rural education remains to be seen. More pay for teachers and more aid for rural districts are likely.

State Fair Started.—The State Fair project has been given a start at least. The men in charge of the purse strings have agreed to appropriate \$15,000 to have plans made, sites inspected and optioned and a report made. While friends of agriculture are disappointed the way has been opened for an exhibition such as the state certainly needs.

Money for Forests.—In addition the Legislature is about to vote the highest sum yet given for purchase of lands to extend forest reserves and to fight the fires. The Pinchot program may not be adopted in its entirety but a substantial start is assured and the state will get its money's worth. Popular sentiment has manifested itself.

State to Get More.—It seems certain the State will get more interest for the millions it has on deposits. Whether the Legislature will adopt the plan to have a board regulate the interest according to the prevailing rates or whether the makeshift bill to raise the rate will go thru the State stands to secure more. Whether the rural school districts will get their money more promptly, of course, cannot be stated now because the general fund from which it is taken is extremely low owing to the tremendous drain of the appropriations of 1919 which are still being paid.

Forest Fire Troubles.—Forest fires have afflicted many counties this year and have come at a good time, if it may be said, to demonstrate the value of a fire fighting system. In some counties the fires have been controlled within small limits, thanks to the preparations made last winter.

Fewer Fairs.—The list of fairs to be held this year shows a decline as compared with some former years. A number of exhibitions have gone out of business since the war and the influenza epidemic and others have struck hard times because of expense.

Employment Bureau Makes Good.—Reports coming to the Capitol are said to show in every section of the State farmers have been able to get good farm hands, and unemployed men to get work, thru State employment agencies. These agencies, especially in the central section, sensed the situation away back in the fall and began a series of "farmers' days" on which farmers and people wishing to go back to the farm or to go to the country could meet. Steps were also taken to send thru the countryside information as to the way railroads and industrial establishments were furloughing people. The result has been "placing" of hundreds of people and the building up of a system that will be valuable in years to come. Incidentally, it may be said that the idle farms of the last three years have been taken out of what was mislabeled the "abandoned" class. They will soon be blossoming again.

Eggs are Stored.—A difference of something like three and a quarter million dozens of eggs in storage on April 1 as compared with January has been reported by the cold storage warehouses to Director James Foust. The big increase is attributed to the heavy laying because of mild weather. There is also a gain in poultry and pork as well as butter.—Hamilton, Harrisburg.

NEW YORK LETTER

Pooling Progress.—On March 20 the Dairy-men's League had received over 46,000 of the 50,000 signatures needed to make the pooling of milk sales possible. They have since come in rapidly and the League will continue to take contracts that all of the 73,000 now actually delivering milk may come into the plan harmoniously. Tompkins County is arranging for at least five pooling plants, and other counties are preparing to pool in May. A debate between Paul Smith, League director, and a representative of Nestle's Food Company was listened to by farmers of two counties at the State College on Saturday. The Nestle firm will not recognize the League and has lost all but about 250,000 lbs. of the milk it was formerly receiving at the rate of 60,000 lbs. a day. Dairymen everywhere are counselled to

ignore all firms that will not recognize the League.

Legislative Notes.—Governor Miller signed the bill appropriating \$90,000,000 for state expenses without cancelling one item. This is the first time this has been done since Theodore Roosevelt was Governor, and marks real co-operation in cutting expenses in all departments. The bill to impose a literacy test on voters has passed the Senate, and seems likely to be submitted to voters next fall. New York City finds that Governor Miller's prohibition amendment can be enforced. A halt has been called on appropriations to build a big elevator at Oswego, as work can proceed this year without further appropriations.

Fruit Greatly Injured.—Central New York apples are said to be injured 85 to 90 per cent. The famous Hinchings orchards are nearly a total loss. Spies may come thru with fruit. The temperature went to 18 to 20 degrees this week and cherries, plums, pears and peaches are all seriously injured except in western counties and those near the Great Lakes. This is the second serious freeze since warm weather set in.

Farmers Use and Need Automobiles.—A wide survey tallies with state registration figures and shows that 33 per cent of the cars are owned in the rural districts and only 9 per cent in the 12 biggest cities. New York has a car to each nine persons.

Farmers' Price Insurance Thrives.—The G. L. F. Exchange is proving the farmers best price insurance as local dealers are forced to meet Grange prices on farm supplies. In one town the dealers asked \$24 to \$28 a ton for 16 per cent acid phosphate. The G. L. F. price was \$21. The local dealers dropped to \$19. In such cases farmers should still be loyal to their own exchange and ask the dealers who forced them to come off their high horse. Only loyalty like this makes possible the million and a half dollar business the G. L. F. has done since January 1. This big business is an increase of 50 per cent over last year's business. There are now 50 local co-operative branches and 22 representatives of the exchange doing business for the farmers of New York.

NEW JERSEY LETTER

Egg Storage Leaps.—There were 161,162 cases of eggs in the cold storage warehouses in New Jersey on March 31 last as compared with February 28 last when there were only 579. There was also an increase in the number of pounds of broken eggs stored in that period, 257,270 being in the warehouses on February 28 while on March 31 there were 467,190. These and the following comparison of amounts of foodstuffs stored as between the dates mentioned were given out by the Bureau of Foods and Drugs of the State Department of Health: Cheese, Feb. 28, 470,609 lbs., and March 31, 209,273 lbs.; butter, Feb. 28, 1,063,763 lbs., and March 31, 630,035; poultry, Feb. 28, 6,538,754 lbs., and March 31, 4,623,593 lbs.; fresh meats, Feb. 28, 29,362,125 lbs., and March 31, 27,000,701 lbs.; fresh fish, Feb. 28, 1,502,407 lbs., and March 31, 1,043,899 lbs.; milk and milk products, Feb. 28, 755,325 lbs., and March 31, 715,587 lbs.; game, Feb. 28, 6719 lbs., and March 31, 100 pounds.

Governor Kills Bills.—Two bills passed by the Legislature at the solicitation of pure food advocates have been disapproved by Governor Edwards by filing them in the State Library. One sought to increase the nutritious quality of ice cream, while the other was designed to fix a higher standard for condensed milk. Both measures, in the opinion of the Governor, interfered with established business. Governor Edwards also disapproved of a bill providing for the addition of approximately 500 miles to the New Jersey highway system. Among the last measures to be signed by the Governor was one permitting counties to outline advance programs for highway improvements for approval by the State Highway Commission, and another allowing the State Highway Commission to enter into contracts with owner of toll roads and bridges before taking them over.

DELAWARE NOTES

The recent fall of 60 degrees in the temperature accompanied by cold rain, hail and sleet, and followed by a severe freeze has made fruit growers apprehensive that the prospects for fruit this year have received the severest blow in years. Reports from various sections of the state indicate that the temperature went as low as 24, reports ranging from that figure to 28. At one place, it was said that the thermometer registered as low as 20 degrees. Garden truck generally was not far enough advanced to be greatly damaged, but in a few places peas and beans were reported up and killed by the freeze. Strawberries in some sections were reported killed. In other sections the plants were not far enough advanced to be greatly damaged. Reports from that section of Kent County around Dover are that practically all the fruit has been killed, including strawberries, and it is believed that grapes are also badly damaged. One fruit grower in the central part of Kent County, after going thru his orchard, declared it looked as tho the trees had been struck by fire, so black were they where the buds had been killed. Peach and pear trees in Kent County and most other parts of the state were practically all in bloom and early apples were in blossom, reported Frank Bancroft of Wilmington.

A Power Cultivator for All Trunk Crops

New 1921 MODEL

Merry Garden Auto-Cultivator

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Helps on Machinery Problems

By F. A. WIRT, Mechanical Engineer

How can I best and most quickly learn to operate a tractor and get good results?—A. B. S., Blair Co., Pa.

The very first thing you should do is to get a copy of the instruction book furnished with the tractor and read it thru very carefully. Then, after you have had the tractor started on your farm, read the instruction book again with the tractor before you and be sure to understand each statement before reading further. Pay particular attention to the starting and stopping of the tractor. One new tractor owner found out how to start his machine but did not learn thoroughly how to stop it. He ran over a good sized tree and did considerable damage.

Before putting the tractor to work, either plowing or driving on the belt you will find it time well spent to maneuver the tractor turning, running forward, backing, hitching to machine, etc.

Don't whatever you do, overload the tractor at first to see if it will pull a big hill on high or pull too heavy a thrasher up-hill. This practice is altogether too common and shortens the life of a tractor by months, in some cases years.

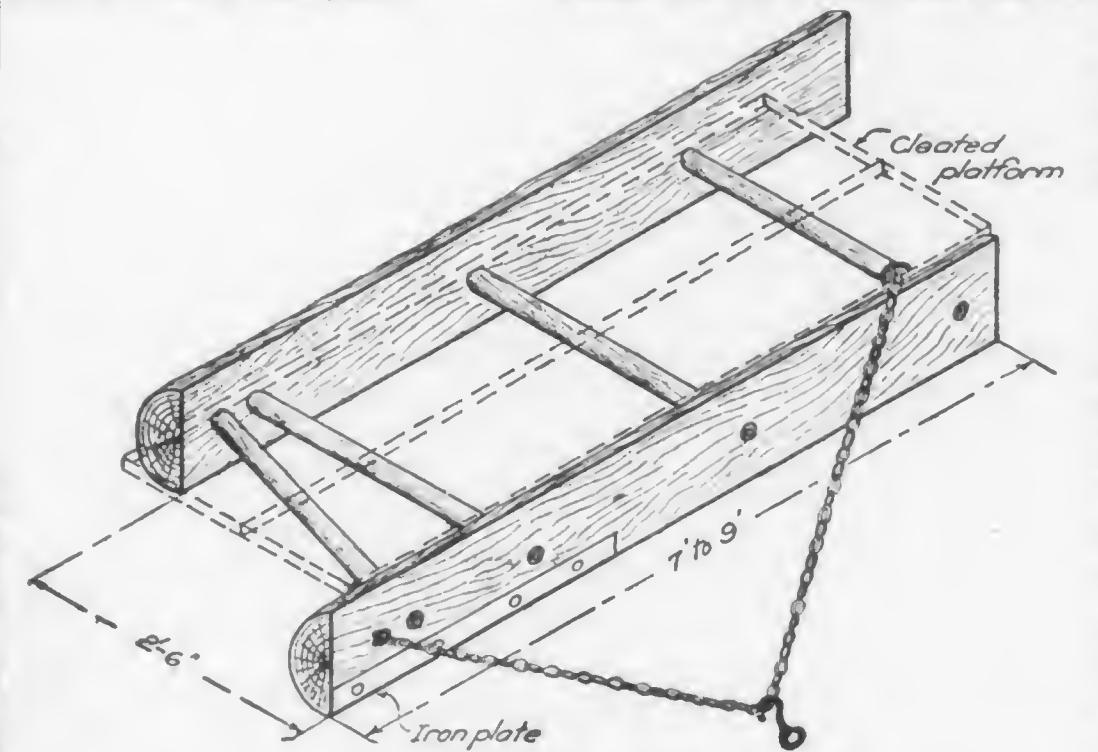
frequently; (2) Don't overload at any time; (3) Lubricate regularly with good quality of oil and grease; (4) Keep all nuts tight; (5) Have regular schedule for lubricating and overhauling.

Why is it that I get uneven stands of corn when planted with my corn planter? I have a good make and it is kept in good repair.—B. T. W., Salem Co., N. J.

After the seed corn is ready to plant the kernels should be tried for "fit" in the cells of the plates furnished with the planter. Choose the plate which seems best and they try out the planter by any one of several methods:

Jack up the planter frame so that the drive wheel can be turned by hand while the forks are tripped quickly similarly to action of check-wire. Some one should catch the kernels as they drop and keep a record of accuracy. It may be necessary to try another plate. You will notice a surprising difference in the accuracy of different sizes of plates.

One corn grower whom the writer knows, fills the hoppers and runs the



PLANS FOR THE KING ROAD DRAG

Showing Details of Construction of a Seven-foot Drag. Dotted Lines Indicate Platform Boards

In the actual operation of the tractor you will find it profitable to pay particular attention to lubrication. The right oil and grease in the right place at the right time is a wonderful money-saver. Good lubrication saves repairs and breakdowns, does more to prolong the life of the tractor and increase the profits of tractor-farming than any other factor.

"Keep all the nuts tight" speaks volumes. It is the best kind of advice and should be followed with the utmost care, daily at first, and later at least once a week.

And by all means, have a regular schedule to lubricate and overhaul the tractor. Time spent twice a day, daily, weekly and monthly, according to schedule, will pay you big dividends, and when you have a rush job you will be using your tractor while your neighbor who does not pay attention to regular and systematic care, will be saying harsh things about his tractor when he has only himself to blame. It might be mentioned incidentally that the tractor owner who spends a few minutes daily in keeping his tractor clean, seems to get the best results.

To sum it up briefly: (1) Study the instruction book and refer to it

cut clean. The knives were all sharp.—W. B., Lancaster Co., Pa.

The trouble you mention is due to lack of a shear-cut at one of the guards. The action of a cutter-bar is exactly similar to a pair of scissors which will crush or "chew off" a piece of cloth unless the blades fit snugly. The cutter-bar should also be examined frequently as the guards are easily loosened or bent out of line. Light blows of a hammer 1 1/2 inches back of the point will drive back into line any guard which is bent up or down.

How often should I change the oil in the crankcase of my tractor? A. S., Maryland.

Frequency of changing oil in a tractor crankcase depends upon (1) kind of gas engine oil used; (2) amount of work done; (3) efficiency of engine in using kerosene.

The manufacturers recommend changing oil in crankcase every 30 to 60 hours of work done. By using only the best oil obtainable, and by getting the most out of the fuel, you can tell by "feeling" the oil between the fingers before draining the crankcase whether or not it is safe to use it longer. Under no circumstances us the oil longer than for 60 hours of hard work, then drain, wash out the crankcase with kerosene, and refill with fresh oil. The old oil can be strained to remove the sediment and then used for oiling farm implements. It is better to change more frequently and have a smaller repair bill.

A TRACTOR TRAILER

One of the first things we found that we needed after buying a tractor was a light trailer that could be used to haul oils, gasoline and supplies to the lower end of the place when the tractor was being used down there. While the trip back and forth from the house to the field is not far, the supply of fuel and oil on hand in the field is convenient, making it unnecessary to make the trip with the tractor more than once a day.

Nearly every farmer has at least two stout metal wheels he can use to make a supply cart to be drawn behind the tractor. The one shown in the accompanying photo answers the purposes very well and is useful about the farm as well. One objection to it is that the wheels are a little too high which makes it a little difficult to fill the oil drums, but once filled the fuel is easily drained out to put into the tractor tank.

The making of the hitch was a very simple matter as may be seen. The pole of the wagon was inverted and reinforced with narrow metal strips. While the tongue is low enough to strike some obstructions, the tongue is flexible enough to pass over almost anything the tractor will clear.—J. L. J.



Farm Organizations

The National Organization of Farmers

By FRANK APP, New Jersey

THE PUBLIC wants to know why he could obtain by engaging his there should be a national services in some other industry. movement abroad which is perfecting a national farmers' organization, supported by paid membership from practically every state, county and community of the nation. Heretofore we have had, here and there, a number of local farmers' organizations, a few of which functioned as national, for one phase or another of the agricultural industry, but most of which were merely local and had a restricted influence on the farmers' interests. The present movement has been prompted by three important phases pertaining to agricultural welfare and industry. These are namely, business, legislation and education.

Farming as a Business

Today, farming is becoming a profession or a vocation, the same as other business interests. Heretofore, the farm was more or less a home and place to live while at the same time it afforded those who dwell there the means of a livelihood by furnishing a house to live in and food which was raised largely by the farmer's own efforts. Years ago farming represented the business of almost the entire population. When the first census was taken 90 per cent of the people of the United States were engaged in farming. Consequently, it was practically the only means of livelihood. But today, it is placed on a plane, where it is essential that it can compete with other industries, by affording the individual a return commensurate with that of other industries. It must allow him the comforts as well as the necessities of life comparable to that of other walks of life.

The Farmer Essentially a Producer

Up to the present time, the American farmer has been almost entirely a producer. In this he is most efficient. If we compare him with the European farmer we find that he produces from two to three times as much food as a farmer in Europe. This fact has made the United States the prosperous nation it is. It has allowed cheap food for the consumer, has made possible the building of great cities and has afforded the means whereby our manufacturers could compete in foreign markets with manufactured goods and at the same time pay the highest wages of any nation to their employees. Consequently, the safe, sound and economical production of food is and must remain the basis of our national prosperity, both agricultural and industrial. At times, the public feels that the American farmer is not a good business man, and that he is inefficient and unprogressive. Frequently, the most successful business man from the city attempts to demonstrate a farm efficiently operated. Almost without exception their attempts have been failures, due to the fact that they were not well enough informed to run a farm economically. The production of food must be left to those trained in agricultural production. It must be left to the farmer who is prosperous because the industry affords him an income commensurate to that which

Forces of Industry Have Changed

Today, the industries of the nation have changed to such a degree that it is compelling a similar change on the part of agriculture if it shall remain a strong, substantial and virile industry. At the present time approximately one-third of the population is actively engaged in farming. This means that one-third of the population produces sufficient food for itself and the other two-thirds. It means that farmers are competing for labor, capital and material with the manufacturer and the trader.

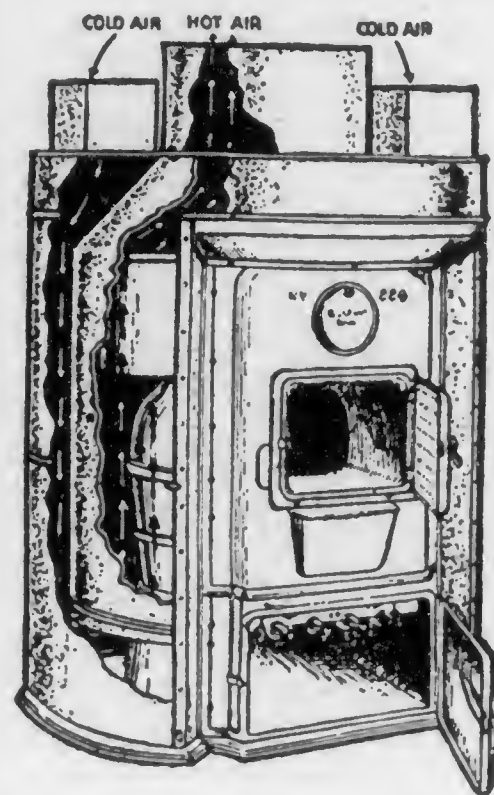
System of Marketing Broken Down

The farmer is the only producer of large quantities of goods who gives entire control of his product to a dealer as soon as it leaves his farm or place of production. This system was built up by degrees because the agricultural production is conducted by such a large number of individuals. It was not economical for one individual to take care of his product until it reached the consumer, or to see that it arrived safely at the consumer's door. Consequently, there was developed a system which handles the agricultural products from the time they leave the farm until they reach the consumer's table. With the stress of more recent conditions this machinery has broken down, and entails a hardship to the farmer as well as to the consumer. The margin between what the farmer receives and what the consumer pays, is out of proportion to the service rendered.

It means that our system of distribution, is no longer satisfactory. Wherever this is true, it will be necessary for the farmers to act and bargain in a collective way to market their products, to retain control until their products are on the market or within the reach of the consumer. Such a need must be promoted by a large organization which has the moral and material support of the majority of farmers. This will necessitate commodity organizations controlled by the farmers who can pool their products or market thru a central selling organization and place them on the market in an orderly fashion. They will need capital and storing facilities as well as high-class employees to handle and manage the marketing associations. It will mean that they need to employ some of the methods which have been used in the past by big organized business interests. It will mean that farmers must employ someone who can promote and prepare the best methods of handling and selling; the proper advertising of products, the proper grading and the distribution needed both as to time, place and manner. It will necessitate going back to the old custom of which you will read in the Good Book where a certain Jew stored grain during years of plenty for the years of famine. It will need to have laws which will allow storage of stable products during years of plenty.

(Continued Next Week.)

SUMMIT PIPELESS FURNACE



A FURNACE built by the Summit Foundry Co. can be relied upon in every detail of construction, and for the quality of materials that go into its making. A thorough test by experts before your furnace leaves the foundry eliminates all chance of hidden defects. A Summit Pipeless never has been returned to us for any reason whatever.

No Cold Air Floor Drafts with the Special Summit Installation

Two cold air returns placed at a distance from either side of the hot air register take in the cold air, which is returned to the heating surface of the furnace, without having to pass over the floors on its return. This is a great improvement over the average one-pipe furnace

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PEEPS that live "for keeps"

—chicks with the finest grip on the life line. That's the biggest part of that Hillpot Quality name—their sturdy vitality keeps them standing and healthy. In every Hillpot Chick there is an unlimited quantity of quality.

ORDER NOW at these prices

W. Leghorns	25	50	100
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Barred Rocks	5.50	10.00	20.00
R. I. Reds	6.25	12.50	25.00
White Wyandottes	6.75	12.50	25.00
White Wyandottes	8.00	15.00	30.00

SPECIAL MATING

W. Leghorns	25	50	100
Pen 2	\$6.75	\$12.50	\$25.00
Barred Rocks	8.00	15.00	30.00
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Canal deliver W. Leghorns before May 4th. Hatching dates: April 27, May 4, 11, 18 and 25.

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Frenchtown, N. J.

Stockton Hatchery

Shells, pure bred chicks, recognized as superior in production and quality.

Immediate Deliveries
April 5, 6, 12, 19, 26
20,000 Chicks Weekly

Order direct from ad if prompt shipments are wanted. All chicks shipped prepaid, safe delivery guaranteed.

Per 100	Per 50	Per 25	
S. C. White Leghorns	\$19.00	\$10.00	\$5.50
Barred Rocks	20.00	10.50	6.00
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Send your order NOW for choice April and May chicks. CATALOG FREE.

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Emmett R. Wilson

LEGHORN CHICKS

from our large, long-bodied, big-combed, vigorous hens, especially bred for large white eggs. We have largely old hens for breeders that have been selected from thousands of birds. They are handled in greatest good hatchable size and

STRONG CHICKS

that will live if given half a chance. We have the largest flock of Leghorns in York Co., built up in 8 years from a beginning with less than 100 hens. We have now made large stock records; but have also transported and Cornell Certified Stock for further improvement. Chicks for May and June, \$11 per 100 delivered.

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300,000 Chicks for 1921

The best, healthiest, and most vigorous chicks obtainable, hatched in the finest, most sanitary and best equipped hatcheries in the state.

Keystone Chicks are Famous for Their Easy to Raise—and Quick to Grow Qualities.

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S. C. White and Brown Leghorns, B. P. Rocks, R. I. Reds, Black Minorcas, Shaded Anconas and Buff Orpingtons, 10 cents each and up. Fine illustrated catalog free.

THE KEYSTONE HATCHERY, Richfield, Pa.

HUMMER'S Famous Guaranteed CHICKS

You can see the stock if you desire the quality. That's evidence. Order May Chick advertisement.

Barred Rocks	\$18.50	\$10.00
R. I. Reds	17.50	10.00
S. C. W. Leghorns	15.00	10.00
C. W. Brown	15.00	10.00
S. C. Anconas	24.00	10.00
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SHORT CUTS WITH THE CORN CROP

(Continued From Page One).

box or the rag doll tester to give you a report on the germinating qualities of every ear intended for seed and use only those ears upon which you get a report which is 100 per cent favorable.

Grading

A uniform stand depends not only upon high test seed but upon seed of uniform dimension. Where there is a wide variation in the size of kernels it is inevitable that regardless of the drill plate used there will be occasions where two grains will be dropped instead of one and still others where owing to unusually large grains a complete miss is experienced. The grader sizes the corn after it is shelled, eliminating the very small, the very large and misshapen kernels and insures the planting of one grain and only one each time a slot in the disc passes over the aperture in the bottom of the hopper.

Controlling the stand of corn then becomes a simple matter with tested, graded seed. You plant with confidence and ignoring the formula of our fathers "one for the blackbird, one for the crow, one for the cut worm and two to grow" you plant at such intervals as you desire permanent stalks. This will vary according to the latitude and altitude of your situation. Where a growing season of one hundred and twenty days is the rule and large varieties are consequently grown eighteen inches is none too far apart for maximum development of ears while in the latitudes having a ten-day to two weeks shorter season the approved distance will be in the neighborhood of from twelve to fourteen inches. Thru testing and grading, then, the writer asserts that the two rather time consuming and expensive operations of replanting and thinning corn become unnecessary, that the time saved reduces the ultimate cost of a bushel of corn and enables one to give other farm enterprises additional and profitable attention. This is not only the writer's theory but his successful practice.

Exit the Hoe

The man with the hoe may be a poetic figure but in the corn field he is first of all expensive. The average farmer can keep his hoe hanging in the wagon shed thru the entire season and still maintain a clean field unless handicapped with soil that is polluted with weed seed or by a succession of rainfall rendering cultivation at the critical time impossible. Fall plowing, aside from many other considerations in its favor is one means to this end. The plowing within itself has no effect but the practice enables one thru periodic workings from say April 1 to May 10 to kill off successive crops of weeds. Where plowing precedes planting by only a few days it is exceptional if the weed problem does not become serious and remain so thru the season. Early and deep cultivation pays. Before corn shoots thru is the approved time for the first or "blind" cultivation of rows using a double worker with shields to prevent earth from being deposited on the corn rows. Immediately following this and before the shoots have made their appearance the use of the weeder is very helpful in killing the tiny weed plants that inevitably grow within the row. Perhaps no implement on the farm has been

used and discarded to the extent of the weeder. It is to be found in lofts, gullies, fence corners and diverse places and yet in the program of weed control in cultivated crops especially corn and potatoes it is indispensable to the man who understands and appreciates its use. Weed control calls for an aggressive policy; the weed plants must be assailed at a tender age and the implement in question used when the plants are tiny has no equal. Subsequently the cultivation of corn will be with the two-wheeled scalled double worker and after each rain or as frequently as a well-balanced farm working schedule will permit. In spite of the treatment described weeds persist within the row a careful man on the cultivator driving slowly can often throw enough dirt to smother the weed plants without injury to the corn. Some growers experience great difficulty in keeping rag weed and lambs quarter out of silage corn rows but if these men will go to the very slight trouble of planting soy beans in the row with the corn, their weed troubles will cease, their corn if anything will be heavier for the association with a legume and the protein content of their ensilage will be materially increased. There is no room for weeds in a corn row that has a thrifty, inoculated, quick growing soy bean plant every two or three inches. It should be noted at this point that the beans in order to come up promptly if at all must be planted at a shallow depth and the weeder has no place on this section of the field.

To Cut or Not to Cut

Recent labor costs and shortage have popularized to a marked degree the practice of husking corn from the standing stalk. While this has been the approved method in the corn belt for years only recently has the practice gained headway east of the Alleghenies. Anyone who has traveled thru much of our eastern farming section this winter and who has been familiar with eastern methods in the past cannot help being impressed with the large acreage which has been cared for in this way during the 1920 season. Obviously the same acreage can be handled in less time and with less labor than when cut and husked in the usual manner.

Where the fodder is necessary as winter forage it cannot be handled to such advantage as many of the leaves are lost and the quality is impaired by too long exposure to the elements but where enough hay is available for roughage and the fodder is not required it will return considerable to the soil when plowed under not only as organic matter but as plant food. Scientists tell us that a ton of corn fodder contains about 18.5 pounds nitrogen, 5 pounds of phosphoric acid and 24.5 pounds potash representing at the present time a manurial value in excess of ten dollars. The following set of figures handed me by a New Jersey farmer who two years ago made a careful comparison between the costs of the two systems shows very clearly how the western method of husking from the standing stalk and pitching ears directly into the wagon speeds up the harvesting operation and at the same time lowers costs.

Expense of cutting and husking 1 acre—old method.
Cutting 60 shocks @ 7c.... \$4.20
6 pounds twine for tying..... .90
Husking 60 shocks at 10c.... 6.00
..... \$11.10
Expense of husking and cribbing

one acre from standing corn—
19.5 hours labor @ 25c..... 4.87
Gain per acre in favor of second method..... \$6.23

The Silo

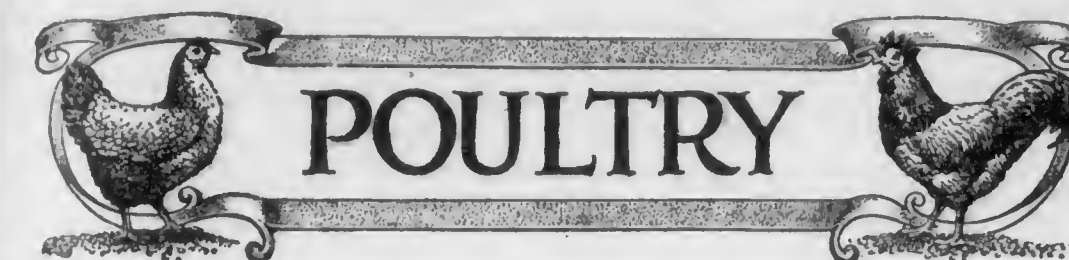
As a means of quickly disposing of a good share of the corn crop or in other words taking a short cut at the harvest season there is nothing equal to the silo. This discussion does not cover the advantages of silage as a succulent, bulky, palatable and nutritious feed but is concerned only with the silo as an efficiency factor in disposing of a part of the crop. While the expense of silo filling may be about equal to that of caring for the same acreage by the usual method of cutting, husking, cribbing, etc., the appeal of the short cuts made possible thru the silo is very strong indeed.

A properly organized crew in a short time clears a good acreage and the operations of cutting, husking, cribbing, hauling fodder, shelling and grinding corn are at one fell swoop either accomplished or eliminated by this process. The corn harvester should be mentioned not only for its value in replacing men at silo filling but also as a practical and efficient means of cutting the main crop when cutting is a necessity. Equipped with a bundle carrier and in the hands of a responsible lad of from fourteen to sixteen years the harvester will account for from five to seven acres per day under average conditions and two men will stand up the same amount of corn. Ears that become detached from the stalk unless very few in number should be ignored by those who stand up the bundles and gathered in a wagon later on as a special job of itself.

Letting the Hogs Do the Work

Any discussion of short cuts with the corn crop would be incomplete without reference to the practice of hogging off, a practice while little known or followed in the East ten years ago is now commanding the attention of hog and corn growers on every hand. The old idea that hogging down corn was a wasteful if not slovenly practice is now in the discard and our evidence is all to the effect that instead of being a wasteful enterprise it is highly profitable. A few figures in support of this statement will serve as convincing evidence. Two years ago the Dauphin County, Pa., Farm Bureau thru co-operative work on the part of four prominent hog men of that section finished off a total of 133 hogs in the corn fields of the four farms involved. These hogs spent an average of 28 days in the corn, made an average daily gain while there of 1.9 pounds and paid an average price of \$2.02 for every bushel of corn eaten. They wasted none. More comprehensive is the report issued by the department of Agricultural Extension of the Pennsylvania State College for the same year. The work of seventeen demonstrations is summarized and shows the average number of days spent in the corn fields to be 30, the average weight of porkers when turned into the standing corn 126.5 pounds, the average daily gain 1.6 pounds, a production of 20,590 pounds of pork on 36.27 acres and a price received for corn so marketed of \$1.92 per bushel. More up-to-date are the figures summarizing the hog pasture work in Pennsylvania for 1920. The one fact that will be quoted from this summary to the exclusion of others

(Continued to Page 16).



COLONY BROODING

"Coal Stove Colony Brooding" is the title of one of the recent circulars of the Department of Poultry Husbandry of the New Jersey Experiment Station. Many helpful suggestions are offered for the proper care of young chicks during the first few days that they are in the brooder house. The importance of a uniform temperature is one of the essential points emphasized. "A few hours without heat will ruin a flock of chicks completely. High and low temperatures lead to digestive troubles. In the beginning the chicks should be confined near the hover by a low, circular barrier of wire or roofing material, which can be moved farther from the stove as the chicks accustom themselves to the house and learn to return to the source of heat. This can finally be moved just to turn the corners of the house, eliminating the danger of

Lesson 157 "Feeding for Egg Production" gives full instructions for the feeding of laying hens. Numerous tables are given which show the composition of the various common feeds, the needs of the fowl, etc., and full instructions cover the whole subject of feeding and keeping of feed and egg records. Both of these publications are illustrated with many instructive pictures and diagrams and will form a valuable addition to the library of any poultryman.

The Poultry Series of the Cornell Reading Course is published by the New York State College of Agriculture and information concerning the courses may be obtained by addressing the Supervisor, Cornell Farm Study Courses, Cornell University, Ithaca, N. Y.

"Common Poultry Diseases" published by the Pennsylvania State College is a helpful circular which contains information to which the poultryman likes to refer often. All of the more common poultry diseases are discussed and symptoms and simple remedies are given. It may be obtained by writing to the Department of Agricultural Extension, State College, Pa., and asking for Extension Circular No. 85.

EXPERIENCE WITH INCUBATOR

This is our first year to use an incubator. We planned to have an early hatch but couldn't get a proper location with proper outside temperature. The cellar in March and earlier was too cold and we had no place else that was kept evenly heated night and day. Just how we may be able to regulate it in milder weather we don't feel certain.

The mistake we have made and one that I am sure may be remedied is in the selection of machine. Get one that you yourself have examined and that is claimed to run regularly regardless of outside conditions. This is only possible in a well built incubator. The door as well as the sides all around must be made with double thicknesses of material and a dead air space between. This retains the heat inside the incubator and does not let it escape into the surrounding space.

As is generally the case the interior make of machine is the cheap one, and it pays more than pays to obtain the better article at a slightly higher price.—M. G. F., Clearfield Co., Pa.

CHICKS WITH GAPS

I have found the best thing to do for young chicks with the gaps, is to catch them and feed them vinegar bread. If they refuse to eat open their mouths and put it in, also a little vinegar. This has been tried for three generations in our family and has always been successful.—Mrs. H. S. M. Berks Co., Pa.

Cedar excelsior makes excellent nests and is not so likely to become infested with lice.

While ducks require plenty of water in the day time, they should be provided with dry quarters at night. No other fowl is more quickly injured by dampness.

HELPFUL POULTRY LITERATURE

Two recent publications that should be helpful to poultrymen are Lessons 156 and 157 of the Poultry Series in the Cornell Reading Course for the farm. The first of these is on incubation and covers the essential points in the hatching of chicks. Both natural and artificial incubation are taken up and special emphasis is laid on the testing of eggs and the proper methods of handling them after they have been put in the incubator.



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it's mahogany, oak or walnut, matters not, there is a Vernicol finish for each. No trick to use it. Goes on with a brush just as easy as spreading butter on hot toast. It sure does make things do by doing them over. Sold by the best dealer in each town. Send to this address for Vernicol Circular.

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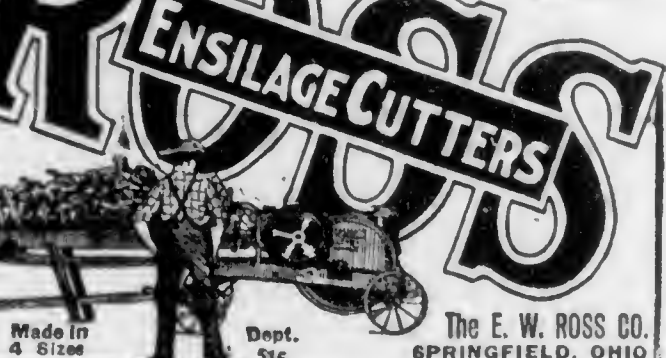
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Of Interest to Farm Women and Girls

MALNUTRITION

By PEARL MacDONALD

(Continued from Issue of April 2.)

The more common defects of children are adenoids, enlarged or diseased tonsils, decayed or abscessed teeth, eye or ear trouble. In what way do these defects interfere with normal growth?

Adenoids are quite common among young children. They are bunches of tissue that form in the nasal passages, usually just above the palate. They close up, entirely or in part, the nasal passage thru which the air passes to the lungs. When the child with adenoids tries to breathe thru the nose, it is too hard work, so he does not get as much air into his lungs as he needs. Because of this lack of oxygen in his lungs his body does not make the best use of the food which he eats, consequently his health becomes impaired. A child who has adenoids is invariably underweight.

Usually a child who has adenoids does not try to breathe thru its nose. Thus it becomes very susceptible to taking colds because of the irritation caused by inhaling dust and cold air directly into the lungs without having it sifted and warmed by going thru the nasal passages, which are provided with corrugations for heating the air, and with fine hairs for catching the dust. Enlarged tonsils are also harmful to health of the child, because they also interfere with proper breathing, and thus cause malnutrition, just as adenoids do.

Diseased tonsils form poisons which are carried by the blood all over the body. These poisons lower the efficiency of the blood by destroying the corpuscles, and thus lessen power of the body to resist disease. Diseased tonsils invariably result in under-nourishment and underweight.

Ear and eye trouble appear in various forms. Eye nerve strain will cause under-nutrition.

Decayed teeth afford places for harmful bacteria to develop. The mouth is the beginning of the digestive tract, and any poisons formed by the action of bacteria in decayed teeth will interfere with digestion

Recognizing Malnutrition

The question which the parent wishes to decide is whether or not a child is suffering from malnutrition, and if it is how to correct the trouble.

The appearance of the child will help much—the color, the brightness of the eyes, condition of the skin, etc. One of the best indicators is the weight of the child. For its height a child should have a certain weight. Weight per age cannot be taken as a standard because some children are small for their age, while others are tall.

By means of the study of many children a table of approximate weights per heights has been worked out by experts. While the tables so far worked out are probably not perfect, because all of this investigation is comparatively new, yet they serve as a reasonably accurate guide.

Following are the height and weight tables for boys and girls prepared by Dr. Thomas D. Wood, and issued by the U. S. Bureau of Education. The standard on normal weight is found where the horizontal column crosses the vertical column under the age. For example, the weight for a boy 51 inches tall and 9 years old is 62 pounds.

If a child is seven to ten per cent under weight, this indicates that there is something very definitely not right about its physical condition. "It is not well with the child." The child may have some physical trouble that is interfering with its health, such as adenoids, or diseased tonsils, bad teeth or some other physical difficulty resulting from faulty habits of living. Or it may not be receiving the right kind and amount of food to meet its body's growing needs. Or the trouble may be a combination of some of these causes.

The first thing to do when you discover that your boy or girl is not weighing as much as it should for its age and height, according to the accompanying tables, is to take the child to a competent physician and

have a thorough examination. Insist on a thorough examination. If there is any physical trouble, set about having it corrected at once. A child simply cannot grow as it should if, for example, his breathing is not right because his nasal passages are obstructed with adenoids, or if diseased tonsils or teeth are constantly forming poisons and discharging them into its system to be carried all thru the body. He cannot grow if some part of his body machinery is not working as it should.

Get the child interested in helping to maintain its own health. Every boy and girl wants to be strong and healthy. At least every boy wants to be strong and every girl wants to have the rosy cheeks that come with good health and a well nourished body. If approached in the right way every child will be willing to play the health game, that is, to see which one of the family can make the best "weight for its height" record each month.

To keep up to standard, the child will have to go to bed and get up at regular hours and get plenty of good sound sleep every night, with the windows open so that there will be plenty of fresh air in the sleeping rooms all night. If your child is much under weight, and is easily made tired and nervous, better keep it out of school for half a day or all day, and see that it has a rest period in the middle of each forenoon and afternoon until there is decided improvement. To build up a strong body is more important than school, and since it is not normally well, it is a waste of effort to send it to school in poor physical condition. The child will easily make up lost school work when it becomes strong and well.

SHOE COMFORT AND ECONOMY

With hides worth less than the cost of skinning the animal that wears them while shoes still sell for war prices, it certainly behooves farm women to consider the question of shoe economy.

For several years I have worn canvas shoes, in tennis style, for all kinds of housework summer and winter. I can do many times the work in comparative comfort that I could possibly accomplish if I wore leather shoes with high heels. My health is far better in every way than it would otherwise be, too.

The idea of paying the top-notch price for an ultra-fashionable shoe bearing the stamp of an exclusive maker is nothing short of idiotic and it is done by working people who can no more afford such extravagance than I can afford an aeroplane. People think if a shoe costs \$10 it must be far better than one that costs \$5 though many times an expert couldn't detect a particle of difference between the two. By the way, I have taken lots of comfort in a pair of shoes that cost 98 cents while other people were paying ten times as much, and the shoes were often admired by my well-to-do friends too. They were selected from a lot of odds and ends of discontinued styles that were marked down for those reasons and if one will use just a bit of common sense such a pair will prove just as satisfactory.

Of course no one likes to appear conspicuously "dowdyish" (and no one hates to worse than I do) but it isn't at all necessary, and if every one felt as I do about these things we would remedy the condition that makes \$10 shoes out of worthless hides if it meant going barefoot till prices of shoes come down.—E. M. A.

Weights and measures should be taken without shoes and in usual indoor clothes.

RIGHT HEIGHT AND WEIGHT FOR BOYS															
Height	5	6	7	8	9	10	11	12	13	14	15	16			
Inches	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53
Weight	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49
Years	5	6	7	8	9	10	11	12	13	14	15	16			
Height	5	6	7	8	9	10	11	12	13	14	15	16			
Inches	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53
Weight	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49
Years	5	6	7	8	9	10	11	12	13	14	15	16			

ABOUT WHAT A BOY SHOULD GAIN EACH MONTH
Age 5 to 8..... 8 oz. 12 to 16..... 8 oz.
8 to 12..... 8 oz. 16 to 18..... 8 oz.
18 to 24..... 8 oz. 24 to 30..... 8 oz.
Weigh on the same date each month about the same hour of the day.

TIME TO CLEAN UP

By Hilda Richmond

Making surveys is such a popular thing nowadays that even the busiest men and women on the farms are beginning to think, perhaps, it is well to "stand off and look at themselves," as the Irish gentleman put it, to see if new ways and new thoughts cannot lighten farm work and sweeten farm life.

But while surveying the situation from all angles, do not forget that the question of health comes first. To be sure it is too bad if the farm house is shabby for want of paint, and the garden fence is sagging, but first of all the health of the family should be safeguarded. During the war many trees were permitted to go untrimmed for lack of time, and mossy roofs are in evidence where once the sun shone full and free on the homestead. No blame attaches to the farmer who was working with night and main to help save the nation at the call of his government, but now that the war is over the trees need attention. Mossy roofs not only decay the shingles, but they breed disease and should be made impossible by judicious trimming of trees or removal if nothing else will answer.

Then there is the question of drainage that suffered during hostilities. It is time that damp cellars should be looked into and oozy backyards be drained. The health of the family depends upon light and air under the house as well as in it, and there should be a good smell in the cellar that is never possible if water accumulates there.

The disposal of garbage is another important matter. If waste matter accumulates, disease follows. A good big bonfire is needed about many premises, followed by burying all such refuse as will not be burned in the fire. Rats harbor in weed-grown brush piles and destroy hundreds of dollars worth of grain, grain sacks and young chickens, while destructive fires in fall often have their origin in these neglected heaps. On a clear, still, hot day in spring clean up all the unsightly heaps and enjoy better health following the wholesale destructive of rat refuges.

Having cleaned the premises and made sure that the family water supply for both man and beast is safe and healthful, it is well to turn the attention to the house itself. Has a patient died of contagious disease and thoro renovation been impossible during the past winter? Tear off the paper from the walls and burn it speedily. Clean the woodwork and throw open the windows to the sunlight. Be sure that all furniture and hangings and bedding are made sanitary and destroy every lurking germ. If a room is damp and musty keep it open until it is fresh and wholesome if it is the sacred parlor, for one musty, unwholesome room in the house can contaminate others.

With the basement dry and white-washed, screen windows to admit air and keep out flies, the trees trimmed to let in the sunshine and the whole house so thoroly cleaned that germs will find no place to lurk. Much of the illness that has preyed upon the inhabitants of America following the great war can be routed. Hurry, worry, anxiety, lack of nourishing food, impure water, surroundings that are not sanitary, these have increased the list of deaths that could have been prevented under normal conditions.

PENNSYLVANIA FARMER PATTERNS

Give figures and letters of each pattern exactly as printed at beginning of each description or we will not be responsible for correct fitting of orders. Give bust measure when ordering waist patterns, waist measure for skirt, and age for children's patterns. Address Pennsylvania Farmer, 261 S. Third Street, Philadelphia, Pa.

3536—3539. — Pretty Afternoon Frock.—The waist is cut in 7 sizes, 34, 36, 38, 40, 42, 44 and 46 inches bust measure. The skirt is cut in 6 sizes: 24, 26, 28, 30, 32 and 34 inches waist measure. 1 1/2 yards at its lower edge. A medium size will require 8 1/2 yards of 36-inch material for tunic, waist and skirt of one material, with 1/2 yard of contrasting material for collar and cuffs. Figured foulard, is the material. This illustration calls for two separate patterns, which cost 10 cents each.



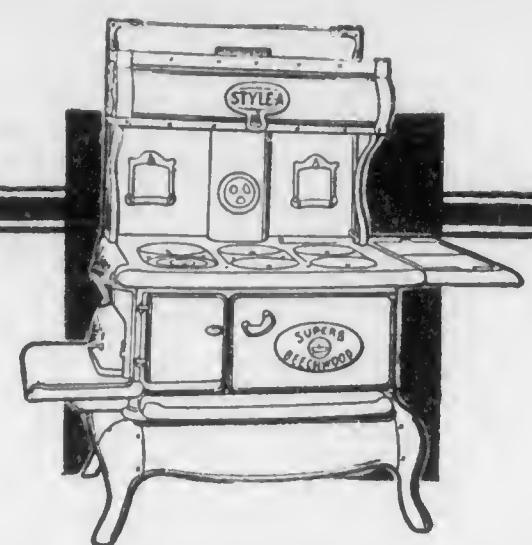
3544—3541.—A Smart Costume.—The skirt is a new circular model cut in 6 sizes: 24, 26, 28, 30, 32 and 34 inches waist measure. It may be cut with or without a center front seam. Without the center front seam a 26-inch requires 2 1/2 yards of 43-inch material if cut crosswise of the goods, and 2 3/4 yards if cut lengthwise of 54-inch material. Cut with center front and back seam and straight at the front edge, it will require 2 1/2 yards of 54-inch material. With bias edges 2 1/2 yards will be required. The blouse is cut in 7 sizes: 34, 36, 38, 40, 42, 44 and 46 inches bust measure, and requires 3 1/2 yards of 27-inch material for a 38-inch size. Sports satin, silk, flannel, crepe de chine, serge, ratine and linen are good materials. The width of the skirt at the foot is 2 3/4 yards. This illustration calls for two separate patterns, which cost 10 cents each.



3551.—Very Attractive Dress.—It is cut in 6 sizes: 34, 36, 38, 40, 42 and 44 inches bust measure. A 38-inch size will require 5 1/2 yards of 44-inch material. The width at the foot is about 2 yards. This style is attractive for silk, satin, linen, gingham, chambray, foulard or challie. Pattern, 10 cents.

3552.—Smart New Gown.—The pattern is cut in 3 sizes: 16, 18 and 20 years. An 18-year size will require 6 yards of 38-inch material. This design shows the new long shoulder, and has very attractive lines. The width of the skirt at the foot with plaits extended is about 2 1/2 yards. Pattern, 10 cents.

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Your partner in cooking

You'll find cooking success more certain with a Beechwood Range. It's always under control. It never balks, never has to be coaxed. A Beechwood is absolutely dependable. That's a big help toward a successful meal.

Beechwood Ranges are fitted with a Duplex Grate that in one turn rakes the fire and exposes the live coals at bottom for immediate cooking. Special constructions save coal and give more heat.

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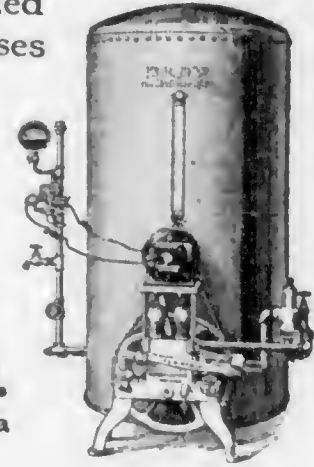
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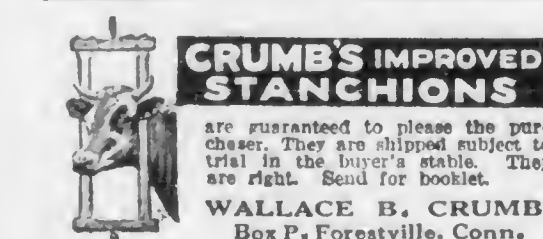
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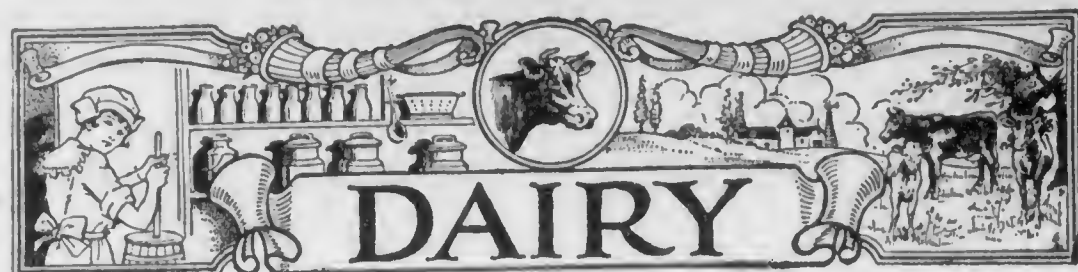
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On Trial. Easy running, easily cleaned. Skims warm or cold milk. Whether dairy is large or small, get handsome catalogue and easy monthly payment offer. Address:

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Feed Market Review

By SANDERS SOSLAND

AS FEEDSTUFFS values extend their downward readjustment, the consuming trade seemingly becomes more pronounced in its bearish attitude. Declines tend to darken or obscure the bullish influences operating in a market. For this reason, the consumer of feeds may question with more or less suspicion the suggestion that some commodities may be bought on a generous scale for deferred requirements. Not all feedstuffs can be classified as cheap enough and on a favorable basis for accumulation of stocks; a majority, in fact, must yet reach their bottom. However, there are important feeds which reflect a healthy tone around the current price levels and which may be bought and laid away for later needs with the promise of proving a profitable investment.

Cottonseed cake and meal, though outwardly reflecting an easy tone, display some distinct signs of underlying strength. Prices on the high



Phoebe D of Mapelawn 24205, the Oldest Cow of the Guernsey Breed to Complete an Advanced Register Record

protein product are at the lowest level for the entire crop year and the lowest in any recent year. Early on the crop cake and meal of 43 per cent protein content were selling around \$65 a ton in Texas, the most important producing state, and a few months previous had sold up to \$85 a ton. The market has declined almost without interruption, and now is down to a basis of about \$20 a ton in Texas, \$22.50 to \$23 a ton in Oklahoma, and about \$23.50 to \$24 in Arkansas territory. Pennsylvania and other Eastern states draw largely from Arkansas and other southeastern producing sections. Not since September of 1914, during the panicky period in the cotton market, have cake and meal sold at lower levels than now prevail, having declined to around \$18.50 in Texas at that time. In April of 1911, cake and meal of 41 per cent protein content declined to around \$20 a ton in Oklahoma, then a new low level, but values were maintained for only a very brief period on this figure.

Thus it is apparent that the high protein feeds are cheap in comparison with war-time and pre-war mar-

kets. Cake and meal also are cheap on the basis of relative feeding value, no feed being available in commercial channels offering protein units at as cheap a price as cottonseed products. Despite this, it is easily within the range of possibilities to witness still further declines in prices.

Among the influences contributing to the belief that the market is now around bottom are the sharp reduction in the operations of crushing plants, the comparatively liberal feeding demand in the Middle West, Central States, and broadening interest among dairymen of the East and on the part of export operators. It is not unusual at this season for cottonseed crushing plants to reduce their activities. This year, or at least in recent months, the extremely light demand for cottonseed oil, the principal product of the plants, and the resulting large accumulation of stocks, have forced a material cur-



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Powerful
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Gal. and 5 Gal. Pkgs.



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Ask your dealer. If your neighbor has Reynolds Covered Roofs—ask him. Because we know that properly laid Reynolds Shingles have always given complete satisfaction. A 10-year iron-clad guarantee fully protects you. It means many more years of roofing service. Your satisfaction is our satisfaction. Insist upon shingles that do not curl, split or crack. Write for name of nearest Reynolds Dealer. He will give you Reynolds Protection.

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"Originators of the Asphalt Shingle"
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Ship your cream in Sturges Refrigerator Cans—special heat and cold proof insulation between heavy outer and inner walls. No icing needed. Keeps contents safely ten to twenty-four hours even in extreme hot weather. Write for Booklet No. 123.

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without stripping after, without injuring your cows.
Investigate this milker!
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off, being extremely light already.

Bullish price theories do not hold well on linseed cake and meal and other protein feeds. Instead, the position of the market is entirely favorable for a downward readjustment in price, the flaxseed product being at a relatively high level. Crushers in Minneapolis quote linseed meal around \$39 to \$40 a ton, and the cake is selling at Eastern export points around \$45 a ton. Within the past few weeks the market has fallen about \$3 a ton, but previously there was a rally of about \$8 a ton from the low point. Liberal buying of linseed cake by foreign countries, including Scandinavian and Holland, also Great Britain, together with light production by mills of the Northwest and East, contributed to the strengthening of values. Domestic demand for both cake and meal is of moderate proportions, but of a hand-to-mouth character, and the market is entering a season of the year when buying shows a rather sharp falling off ordinarily. Even the foreign demand is usually satisfied by the middle of April, and there is evidently already that export buying will be greatly reduced. At the same time the situation is more favorable as regards production by crushing plants. Seasonal demand for linseed oil, the principal product of flaxseed mills, is making itself felt in trade circles, and accumulated stocks of oil are being worked off, which are permitting increased activity of mills. The fact that linseed feed represents a delivered cost of at least \$45 a ton to Middle West consumers and to the Eastern trade, while cottonseed cake and meal can be delivered around \$30 to \$35 and corn below \$20 a ton in the most important consumptive channels, makes for reluctance on the part of domestic feeds and is being reflected in a smaller demand.

Another sharp setback having been recorded in prices, bran and shorts are now selling on a more attractive basis for feeders than at any time in the past four years. Bran can be bought around \$16 a ton in Kansas City and \$16 to \$17 a ton in Minneapolis, the two principal milling markets of the country, and on a basis of about \$19 a ton in St. Louis and Chicago. Delivered prices in the East are generally below \$30 and down to \$26 a ton at some Pennsylvania points. Gray shorts or flour middlings are holding around \$22 a ton in Minneapolis, \$20 in Kansas City and \$22.50 to \$23 in St. Louis and Chicago. Both mill offals are \$3 to \$4 a ton lower than at this time a month ago.

Considerable doubt prevails as to whether bran and shorts are now around bottom. Based on previous market performances, this is the season of high prices, continuing as a rule thru most of May, with a break following near the close of the crop year. However, the seasonal trend almost from the opening of the crop year is ordinarily upward; this year values have moved consistently downward. Current prices for bran are ridiculously cheap compared with a year ago, when the light mill offal was bringing \$55 to \$60 a ton on Middle West markets and shorts about \$60 to \$65 a ton. The best market judgment today is that both bran and shorts are low enough for the present and possibly until the opening of June, but that, without an unfavorable turn in the weather and crop situation, a somewhat lower level is probable by the time the new crop years opens.

McCormick Deering Milwaukee



Now—as to Harvest Time!

THE BINDERS of the nation must come out at harvest time and transform a billowing acreage into a great stubble field ready for the plow. This is a necessity of the near future and every individual farmer must be ready with men and machines to save all the yield of his own fields. Will your present equipment do the right thing for you? We call to your attention the standard binders of the nation.

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are time-tried names, favorably known wherever there is agriculture. Grain binders with these familiar names will demonstrate again that nearly ninety years of harvesting machine development and satisfactory service in the fields of the world stand behind them.

Timely repairs may be your solution for this harvest, but to limp through the season with machines that are truly outworn will prove disastrous. No farmer can afford to run a binder that has served too many years, nor can he practice true economy with a small, inadequate machine if his acreage and power equipment demand an 8-foot binder.

As harvest time approaches, take careful account of your equipment needs, then see the International dealer. He has McCormick, Deering and Milwaukee—the binders that are guarantees of high quality and operating efficiency.

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With the extension roof idea was introduced. Today it is the only extension roof with side walls so nearly straight that silage settles level—no heaped up silage exposed to the air.

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Greatest Improvement of the 20th Century—Everlasting.

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An Inexpensive Milk Producer

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THE LARROWE MILLING CO. DETROIT, MICH.

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Fleming's Spavin Liquid overcomes lameness or money back. Leaves no scar. \$2.50 a bottle postpaid. Send for FREE Vets Pocket Veterinary Adviser. Describes Spavins and 200 other Horse and Cattle Ailments.
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Please Mention Pennsylvania Farmer When Writing to Advertisers

TALKS WITH THE BOYS

TOM HEADS UP-STREAM

"Well, Tom, are you still working in the shops and getting those big pay checks that you told me about a year ago?" This question was addressed by the writer to a young farmer in one of the counties in the iron and coal section of southeastern Pennsylvania. He was a member of a Purebred Pig Club, but under pressure of attractive wages in a nearby shop, the operations of the farm had been reduced to what the father could do himself and the boys had gone to work under the call of the big whistle. Tom had, however, not left entirely from the farm. The shop was only a mile or so from the farm and he lived at home and went on with the breeding of his Poland China hogs. Tom's reply was that work has become slack and he was laid off and was now back in high school, planning to complete his work there. Tom is to be congratulated; he had been going along with the current of easy money and we didn't blame him. But this came to an end and he had the choice of drifting to the side of the stream and getting no where or turning the prow of his boat up stream and rowing against the current. We believe

is by these young men who have become tired of the city job or business and are ready to invest any savings they may have accumulated in the farming game.

These movements are in accord with social and economical laws and in the end probably work out for the good of everybody concerned. At present, however, there are thousands of boys in the position that Tom found himself. They were partly thru high school and felt that duty called them to help, either in the military service, or if not old enough for that, in the production problems of the war. During this period of new experiences they have gotten away from the routine of study and they are now asking themselves whether it is worth while after all to go on with an education. The immediate outlook on the farm may not seem very bright; the bottom has fallen out of the farm prices and their fathers are discouraged.

Aren't we justified in recommending to these young fellows the same choice that Tom made? The value of thoro scientific training for the business of agriculture has never been so great as now. The young farmer who leaves the farm at 17 to go into the works, may, if he is an

for Tom's choice is that to follow it means new visions at every turn. We can't hope to have a successful and profitable agriculture unless a goodly number of our young men dream dreams and see visions of farming as a real life work, worthy of just as much effort in preparation as is needed for any business profession. The farmer with a college training is no longer a curiosity in the best farming communities. His value as a leader is fully recognized.—C. G. McBride, State Club Leader.

LETTERS FROM THE BOYS

Dear Editor—We live on a farm seven miles from Everett, Pa. I am going to school regularly and belong to a Boys' Liberty Bell Bird Club. I have birdhouses up for the birds. We have two horses, four cows, and chickens. I have some pet rabbits and a pet hen. I like to live on the farm and like to drive a team.—Gilchrist L. Hess, Bedford Co., Pa.

Dear Editor—I live in Saco, Bradford Co., on a farm of 115 acres. I am eleven years old and my birthday is the seventeenth of July. There are nineteen scholars in our school. We have two pigs, twelve cows, four calves and three horses. We also have an automobile.—Richard McMorran, Bradford Co., Pa.

Dear Editor—We live on a farm of forty acres in the western part of Adams Co., Pa. We have seven cows, four horses and mules and a great many chickens. I quit school recently.—Clare Dull, Adams Co., Pa.

Dear Editor—I live with my brother who works on a farm of 161 acres. He owns a large span of black horses named "Kit" and "Prince." He also has 15 cows which we milk. I like farming and am happy all the time. I go to church and Sunday school every Sunday and went fourteen Sundays without missing a one.—Donald York, Tioga Co., N. Y.

Dear Editor—I am ten years old and have lived on a farm all my life. Our school closed the last of March and I will be doing lots of things around the farm. I like to harrow and plow. My sister and I set twelve hens and I expect to get quite a number of chicks from them. Last year I had four bantams, two hens and two roosters. I sold one rooster and got 60 cents. My hens laid many eggs.—Abram A. Ruth, Montgomery Co., Pa.

Dear Editor—I am ten years old and am in the fourth grade in school which is about one mile from our home. I have four older brothers and have lots of chickens, pigs, cattle and hogs.—Paul R. Cronrath, Montgomery Co., Pa.

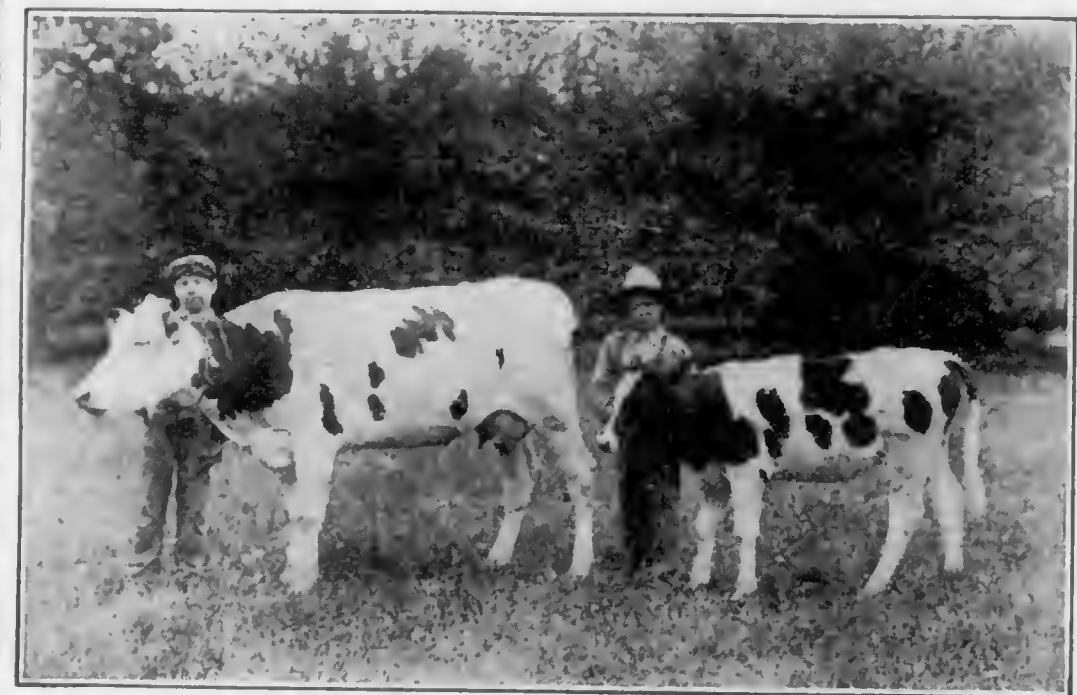
Dear Editor—I am fourteen years of age and live on a farm of 101 acres with my two brothers and sisters. I go to school and am in the seventh grade. We have three cows, five calves, two horses and thirty-five chickens. We also have a large orchard and thirty-five acres of woodland.

I do not trap much but I go hunting sometimes.—L. E. Shafer, Jefferson Co., Pa.

Coming Later

Billy: What are you drawing, Jim?
Jimmy: Why, a dog!
Billy: But where's its tail?
Jimmy: Oh, that's still in the ink bottle!—Boys' Life.

The greatest argument after all,



The Lieby Brothers of Schuylkill Co., Members of a Holstein Club

his choice was a wise one and that the same course could be wisely followed by thousands of young men in Pennsylvania right now.

The boy on the farm has not come in for his full share of consideration in the advice that is being handed out so freely these days, and yet he is a big factor in the agricultural development. Census statistics show that the average life of an American farmer on his farm is fifteen years. This means that each community has the problem of preparing to be successful farmers each year, on the average one-fifteenth as many young men as there are farms in the community.

When the movement of young men to and from the farms is carefully studied it shows some interesting angles. Unusual and intensified industrial development such as we have had in the past few years, always causes the number of farm boys leaving the farm for the industries to shoot up. There is also an interesting study as regards the drift at different ages. The period from 17 to 21 shows the greatest activity cityward, and when we get well into the twenties there is a considerable back current and a goodly percentage of the replacement of retiring farmers

The money value of every day in high school and college has been proven by careful study to be not less than ten dollars. Every indication points to lower prices for farm labor in the next few years and the farm boy should no longer hold back because of the high cost of replacing his labor on the farm. He should figure every day in school as productive labor.

The greatest argument after all,

PASSING EVENTS IN PICTURES



1—South Carolina woman making a small model of "Liddle Boy," President Harding's Alredale terrier.
2—Motorized Hay Wagon Derrick being loaded with hay baled right on the farm.
3—Europe's famous "Siamese Twins." They are joined from above the hips almost to the knee. One of them is a widow with a son eleven years old.

4—White turkeys which are being raised on an English farm, said to be more tasty and delicate in flavor than the common variety.
5—Here are \$1,000,000 worth of confiscated drugs—taken from Chinese opium dens and similar places.
6—San Francisco has a new fire-fighting tug. Note the large number of powerful streams

thrown at the same time from its many "monitors."
7—Donald W. Forsyth, of Mercersburg Academy, topping the bar in the pole vault.
8—Splendid view of the White House, Washington, D. C.
9—Newton Creek, N. J., is said to be yielding enormous quantities of fish. One day's catch by these fishermen filled a boat.

(Photo. Copyright by Underwood & Underwood.)



The acceptable collar style of 200 years ago as painted by the Master Craftsman—Rembrandt.

Beach—

Made by Troy's Master Craftsmen for the Man of Today.

SLIDEWELL SOFT COLLARS

are dignified, comfortable and give long wear—made for the man who demands standard-value merchandise—attractively priced. Your dealer is showing the latest styles.

HALL, HARTWELL & CO., Makers, Troy, N. Y.

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Prices on shoes are way down. This \$1.98 price knocks the bottom out of high prices. Think of it, \$1.98 for this comfortable shoe. Worth \$4.00. It's a hang-up real honest good bargain.

Special Scout Shoe \$1.98

This is a special bargain this good solid all leather summer scout shoe. A light, cool, comfortable, work shoe and as far from high prices as you ever saw. Solid leather soles and uppers. Broad toe. Men everywhere wear this cool, desirable summer shoe. We will send these shoes to you. Send no money with order, just your name, address and size wanted. Pay \$1.98 and postage when shoes arrive. If not satisfied with shoes return them and we will refund your money and postage. Don't delay. Order today.

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Better Than Traps For Rats

Writes Adams Drug Co., Texas

They say: "RAT-SNAP is doing the work and the rat undertakers are as busy as pop corn on a hot stove." Try it on your rats.

RAT-SNAP is a "money back" guaranteed sure killer. Comes ready for use; no mixing with other foods. Cats and dogs won't touch it. Rats dry up and leave no smell.

Three sizes: 35c for one room; 65c for house or chicken yard; \$1.25 for barns and outbuildings. Start killing rats today.

At all drug and hardware stores. You'll's Exterminating Co., Westfield, N. J.

the one best spray for fruits and vegetables

Pyrox

Write for the new Pyrox book—Doubler Insecticide Co.—Boston—Baltimore—Chicago.

HAY

W. D. POWERS CO., 601 W. 33 St., New York

are the largest handlers of commission hay in greater New York; if you have hay to dispose of commission with them.

HAY

If You Grow POTATOES

Spray Them With

Hydroxide

You buy your fertilizer by analysis—do the same with your spraying material.

Hydroxide

has a higher combined analysis than any other spray and contains enough copper and poison to protect your crops against both insects and diseases in the same spraying.

We make a full line of Spraying Chemicals, Lead Arsenate, Lime Sulphur, Scale Oil, Dusting Mixtures, Sulphur (all kinds) Spraying Lime, Paradichloro-benzol.

If your dealer does not carry our line write us direct.

Insecticide Dept., Camden, N. J.

Mechling Bros. Mfg. Co.

CAMDEN, N. J.

Phila., Pa. Beeton, Mass.

Reading Bone Fertilizer

Quality Service Satisfaction
Always look for our trade mark (as shown below) on the bag. It means protection to you, hundreds of farmers in the East have learned to recognize it as the mark of honest, square fertilizer goods and methods.

(This trade mark means quality)

Reading Bone Fertilizer Co., Reading, Pa.

Ask your dealer for Reading Bone Fertilizer. Write for booklet and further information.

Arsenate of Lead

These factory prices will interest you. The best high grade of Arsenate of Lead, put up in paste form and in powder form:

	Paste	Powder
300 lb. drums.....	150 per lb.	234 per lb.
200 lb. drums.....	160 per lb.	236 per lb.
100 lb. drums.....	170 per lb.	238 per lb.
50 lb. drums.....	180 per lb.	240 per lb.

Freight allowed on lots of 200 lbs. and over.

SULPHATE OF COPPER or BLUE VITRIOL

450 lb. barrels at 8 cents per pound. Write for special prices on Lime Sulphur Solution, and any other spray materials that you may need. Shipments will be made from points near you. Order NOW.

HOWARD BROTHERS, South Shattsbury, Vt.

For Biggest Crops

Protect your trees and vines—Spray Good's Fish Oil Soaps used and endorsed for years by U. S. and other government departments. You can't supply them—write us. Send for Free Plant Disease Booklet.

JAMES GOOD, Inc., Kears, Phila., Pa.

Good's Fish-Oil Soaps

Annual White Sweet Clover

Guaranteed Seed of the Hubam or Hughes Variety

Makes growth in one season that ordinary clovers do in two. Yields under cultivation two tons of seed or 300 to 500 pounds of seed. Price \$1 for trial package or \$10.00 per pound. A pound will seed an acre. Make a big profit growing seed for yourself and neighbors. Order before small supply is exhausted from The Henry Field Seed Company, Shenandoah, Iowa, or direct from The Grower Who Guarantees. THE DEGRAFF FOOD COMPANY, DEGRAFF, OHIO.

EXPERIMENT STATIONS AS AN INVESTMENT

(Continued from Page 3).

himself to the new conditions in the agricultural industry and to meet the competition of farmers in other lands. In the long run, tariffs on agricultural imports will be a partial protection only to the American farmer. The best protection and the best assurance of success will be his growing efficiency, an efficiency that will enable him to hold his own under all conditions of fair competition. The American experiment stations are a necessary agent in the building of agricultural efficiency in America. That this fact is well recognized by our political leaders is shown by the efforts to secure thru Federal appropriations better support for the experiment stations in the several states. A bill now pending in Congress, designated as H. R. 15770, if enacted into law, would provide better support to the American experiment stations and is, for this reason, deserving of support by all men and women who are interested in the welfare of our agricultural industry.

THE OTHER SIDE

Don't you think that the farm papers have over-estimated the farmer's bad luck in the falling prices? Look at the merchants who have lost heavily, look at the large concerns which are almost ruined, look at the stock markets; we only see one side. The papers talk of how the merchants are robbing the people. I used to believe it but I do not now. The city wages are high, the rents in city are high, the merchant has to own or rent a house, and own or rent a business place; put the two together and how much does it represent? I guess more than the price of a farm. Then the merchant has to employ help; the help has to live somewhere. Their rent is high, because taxes are high, because gas or electric light is high, because water rent is high and these things are high because the means thru which they were obtained are high—that is, labor. The price of labor is at the bottom of it all; about 90 per cent of the farmer's expense is labor. Our fertilizer is high because the materials are gathered, shipped and handled by high-priced labor and the cars and vessels are built by high-priced labor. By the time the produce which we sell so cheap come on the tables of the restaurants, how many handlings has it had by high-priced labor?

Should we farmers like to live in the cities and have the so-called conveniences that the city enjoys? I think not.

Let us look at the young life in the cities. They have the movies and theatres, the parks—we have miles of beautiful parks. In the cities, if a young lady wishes to entertain she can go to the bakery and procure all the pastry needed for a good showing, and open canned goods from the grocery. In the country the young folks prepare for an entertainment by baking their pastry. They use fresh eggs of the present day's gathering—not the recanted varieties which you break each in a separate saucer. Their cake does not taste of the cornmeal variety as does the city cake. The country girl can go to the cellar and procure fresh apples and vegetables or to the pit in the garden in winter and get celery that is not tough and

stringy. The country lass can go to the organ or piano and entertain her company and does not have to hire the movie or the theatre to entertain for her.

The young folks of the country often gather at a friend's house for a good time, you can see the yard fairly packed with autos—no seven cent trolley there. Our blessings are at our feet if we only realized it.

I know we get discouraged (who does not?), but look at the records of some of the farms, having been in one family for three generations. In the city they say, that is an old firm if its business record runs about 60 or 70 years.

In the city it is a fact that three generations will close out nearly any family. Not so in the country; we have health, happiness and our share of wealth.

We know the farming game, so let us stick to it and not go to the city to be disappointed for very few who go there find the pot of gold that they thought they would find.—C. L. D., Burlington Co., N. J.

ERADICATING GOLDENROD

I have always thought we bought goldenrod seed with the timothy or clover seed we sowed one year; at any rate, there never had been any goldenrod on the field until that year when we seeded it down; then it came in "thick as spatter," and with a grip on the earth that well-nigh broke our backs pulling it. To make the matter worse, every root we broke made a lot of new plants. The roots pushed thru the soil in every direction, until little besides goldenrod was there to be harvested, a pretty poor crop and hard to handle.

For some time we tried to kill the weeds by cutting them "in season." That did not have much effect on them, however, and we came to the conclusion that some more effective way would have to be adopted. The way we took was that of summer fallowing and plowing every few weeks all thru the summer.

We turned the field under first in May, pulling every stalk we discovered and carrying it off the field so that it would not catch root and make new plants. Off and on after that till fall we plowed the field thoroughly, following up our original plan of pulling all plants which remained above ground.

By the time August came, the goldenrod began to get discouraged. Only a stalk here and there appeared. The field lay there that next winter, and the next spring we plowed it again and seeded it down with oats. That was the end of the goldenrod. That thorough cultivation had done its work and done it well.—E. L. V.

SHORT CUTS WITH THE CORN CROP

(Continued from Page 8).

is that for every bushel of corn "sold" hogs in the field last autumn they returned a price of \$1.40. Therefore whether we take the figures for 1919 or 1920 we must accept the fact that hogs if allowed to market a portion of our corn crop will pay approximately twice the market price at the same time relieving us of the two very expensive jobs of cutting and husking. The stalks are returned to earth and the manure is spread. Here is a short cut which among others is both practical and profitable and commends itself very strongly to the corn grower who also dabbles in hogs.



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Poultry, truck, stock and grain farms cheap. FIGGS & NOCK, Salisbury, Maryland.

HORTICULTURE

STABLE MANURE FOR GARDEN

The home gardener who can get a load of well-rotted stable manure need not worry about fertilizer, as anyone who has ever done any gardening is well aware.

Manure contains humus in plenty and all the necessary plant materials, as well as bacteria which put these materials into the most usable shape for crops. To get the full benefit of stable manure, however, it should be balanced with acid phosphate, which is comparatively inexpensive.

An application of one ton of stable manure, which is about an average two-horse load, is not too much for a garden thirty by sixty feet, and fifty pounds of acid phosphate may be used with it.

Fresh stable manure should not be applied in the spring. It contains too much readily available nitrogen and may cause in some plants too great a growth of stems and leaves at the expense of the fruits. This is especially true of tomatoes.

In planning the garden, arrange the rows so that they will run north and south. In this way the sun will shine directly over the rows at noon, in the morning will hit the east side and in the afternoon the west side of the row. Where pole beans and sweet corn are to have a place in the garden they should be planted along the north side, so as not to shade small vegetables.

In digging the garden it is necessary to dip deep—the deeper, up to 10 inches, the better. You will give the plant roots just so much more of a chance to obtain plantfood and the soil will hold more water and act as a large reservoir for plant growth. As soon after digging as possible, rake and level, thus checking undue evaporation of water from the soil.

ACREAGE AND PRICES OF CANNED TOMATOES

The acreage of tomatoes for 1915-1919, the height of the war period, increased over three times what it was before the war. The government commandeered from 1917-1918 33 1-3 per cent of the entire pack, and in 1919 45 per cent of the canned pack. Thus, we more than tripled our acreage, and packed an immense quantity, some of which is still held in the government reserves, and the remainder in the can houses of the canners. No one knows how many tomatoes are still held by the government because of the inability to get rid of the supplies on hand. No one can forecast what the market will be. Judging from the amount the government bought, it appears as though they might have had almost a year's supply left for the entire country.

So long as these conditions exist the grower who studies his business will follow business methods in growing the crop. The cotton growers of the south, backed by the bankers, have announced their intention to reduce the cotton crop 30 per cent. If the New Jersey farmer follows the same practice as the U. S. Steel Corporation, the American Woolen Mills, the automobile manufacturer, he will likewise decrease his acreage of canned to form new plants.

house tomatoes materially.

The cost of growing an acre of tomatoes in 1921 has not decreased nearly so much as the price which the canner can afford to offer the farmer. In many localities there is almost no demand. Information from other tomato growing regions is to the effect that the canners are not in a position to buy or contract as they have in former years. The whole industry is still demoralized.

It requires conservative action on the part of the grower, as every individual must decide whether he should or should not grow the crop. This cannot be decided by anyone but himself. These facts, however, should be given the grower. He should know the conditions of his business before he makes his plans, as it is quite probable that the marginal profit on many things will be small this coming year.—Cumberland Co., N. J. Demonstration News.

THE CURRANT WORM

We should be on the lookout for the currant worm on all currant and gooseberry bushes, as they are pretty sure to appear on the lower branches of the bushes as soon as the leaves come out.

If they are not destroyed they will soon strip the bushes of their foliage and young fruit. I have used Bordeaux mixture with a little Paris green in it with success. If the worms are killed on all of the bushes it is not likely that there will be so many worms the next year. The spray is also a good remedy for the mildew on the bushes.

If the gooseberry bushes are neglected they are not only worthless but they are positively an injury to the community as breeders of pests.—A. J. L., Nicholas Co., W. Va.

MORE MONEY FROM MELONS

Melons sold by the Melon Growers' Association of Southeast Missouri last summer sold for \$50 to \$100 a car more than those sold by independent melon dealers. This association, formed last spring, saved the growers at least \$175,000 the first season.

Four hundred members formed the association last spring, and during the shipping season, shipped \$750,000 worth of melons. Many growers who were not in the association this last season have asked to be in it this year. Besides selling to advantage, this association can also spray, buy seed and machinery, and other equipment at a saving. Surely, it pays to co-operate.—E. A. K.

Locate the home vegetable garden as near the house as possible. Plan the garden early and put into it the vegetables which are particularly popular in your own home. Work out the garden plan carefully on paper before buying seeds.

Buckwheat is particularly valuable as a smother crop to use in eradicating witch grass. It is extensively used as an orchard cover crop, and is of value, also, for honey bees.

Spring prunings may be profitably

This is SOME Sprayer!
Sprays trees, shrubs, potatoes and field crops for insects and fungus; sprays stables, pig and poultry pens and barn yards for lice, vermin and for disinfecting. Also useful for whitewashing stables, poultry houses and fences. It's handy too, for washing windows, buggies and for spraying stock.

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by correcting acidity at minimum cost—nothing else will do it. Not one farm in ten has enough lime, and this lack of lime reduces the effectiveness of fertilizer and tillage and reduces production which increases production cost.

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So if the question is viewed from the broad standpoint, consider the livestock in relation to the land, the livestock in relation to the people who live on the land, consider it from the standpoint of feeding, of breeding, from the standpoint of care and management, there exists no reason why this business will not be relatively more profitable than any other line of agriculture.

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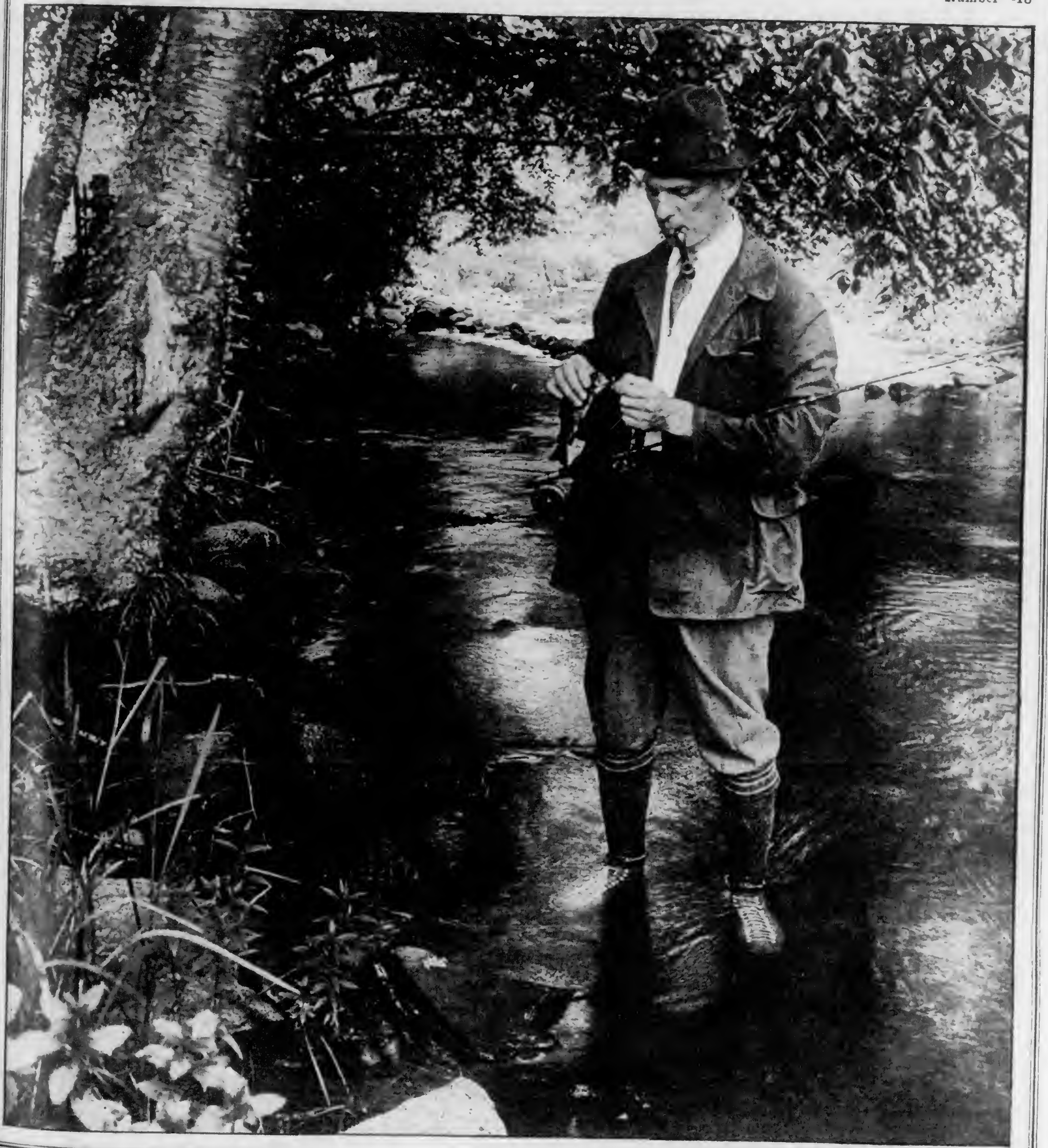
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When Fertilizer Failed

Showing How One Man Learned the Cause of His Clover Failures

By HUGH FERGUS

JIM YOUNG was in a quandary. For the past four or five years his "catches" of clover had been getting poorer and by the time they had wintered they were still more uncertain. At the same time more and more each year of late he had been getting an undesirable crop of sheep sorrel and kindred weeds.

Jim kept enough livestock to consume all the roughage produced on his farm. In addition to returning this to the land by way of manure he had been applying just as much acid phosphate as ever but in spite of this fact not only had his yields of clover been getting decidedly less but he could see that his other crops had not of late years been keeping up to par.

He suspected that the trouble was lack of lime but he had been so busy with his hands the past few years, or ever since he had purchased his farm and was working to get paid off the heavy mortgage he had assumed, that he thought he had no time to use his head and think of lime, drainage, better stock and other such things.

But finally one evening last fall Jim had finished up his work a little early and as he pushed back his chair after just downing a piece of one of his wife Mary's puddings, he said, "Mary, I came across the wheat stubble this afternoon and, by George, if the clover doesn't look discouraging. Last spring I thought I would put on more seed and sowed six quarts per acre of that \$33 a bushel seed. It came up good and when we cut the wheat it still looked promising but today I noticed that some spots had died out entirely and plenty of other places in the field the clover is short and has a sickly yellow look. Frank Olds was telling me the other day that his seedling of clover never looked better and this year he had so much hay that his barn would not begin to hold it all. I believe I will go up and see Frank tonight and see if I cannot save what is left of my seedling."

"I am going along too," said Mary, "we have been so busy this past summer that it has been about nine months since we have had a visit with Jennie and Frank. I will hustle out and hitch up the horse and I will clear off the table and wash and get right away. Don't you worry, I had a flivver, Jim?"

"Yes," Jim said, regretfully as he started for the barn, "I don't think it would pay us to go in debt for one now though while prices are so high and the dollar is so cheap. We will use those cheap dollars we save to pay on the mortgage and buy the flivver when prices become normal again."

In due time the Youngs arrived at the Olds' home and after the usual pleasantries indulged in by friendly neighbors Jim got around to the object of his visit.

"Frank," he said, "of course you know more or less of our financial circumstances and how Mary and I have worked and saved these last few years in an effort to get the better of our mortgage, which I am glad to say we are succeeding in doing. During this time we have kept enough stock to use up all the roughage we grow on our farm besides the corn and oats as grain. All this we have been returning to the fields in the form of manure. At planting time we use acid phosphate with the grains. In spite of this, I suppose you have observed our grain crops do not seem to be increasing in yield the way they should and every year our clover crop is getting more and more uncertain. Today I walked across this year's seedling and in spite of the fact that it looked good at the time we cut the wheat the clover is already gone in some spots and certainly does not look too promising on the rest of the field."

"Now Frank," Jim continued, "during these same years I have noticed that every year your crops of everything are of the best and I have come up here tonight to see if you cannot give me some advice that will help me out."

"Why certainly Jim, I will if I can," said Frank heartily. "I think your trouble is lack of lime."

"When Jennie and I were starting out in life here together we went thru almost exactly the same experience you are going thru. We had gone heavily in debt for our farm, too, and were farming with what we thought was the most economy to make us the most money to get rid of our mortgage. Just as you are doing we fed up as much as possible of our crops on the farm and marketed them in the form of livestock. Only in those days we did not know so much about commercial fertilizer and did not use any. One summer when we had our farm about three-quarters paid for we had a complete failure of clover except in one spot in the field. The year before we had to replaster a couple of rooms in the old house and after the plasterer had finished we cleaned up all the old plaster and the lime we did not use and hauled it out and spread it on a small area of our new seedling. That small area was where we had the clover."

"Jennie," I said to my wife one day after we had cut the hay, "our clover was a failure this year except for one spot and that was the place we hauled the plaster and lime after we finished plastering those two rooms last summer. I believe it must have been the lime which caused the clover to grow for it certainly could not have been the hair and sand in the old plaster. Anyhow I am going to try to get out limestone and

"But to go on with my story. The next year after we took the wheat off we had almost a perfect field of clover and a bigger yield of hay than we ever had. That crop of clover gave me the lime fever and I have been using lime ever since. I learned a good many things about it too as I went along. After I had gotten over the fields once I thought the second time I applied it to a field I should use as much as I did the first time and as a consequence instead of the clover dying for lack of lime some of it died on account of too much lime. But in course of time I have found that after you have limed the fields the first time, the equivalent of one-half to three-quarters of a ton of lump lime per acre every four or five years is sufficient."

"Do you always apply the lime on the ground you are seeding to wheat?" Jim asked.

"No, I don't," Frank answered. "When I first started using it a number of years ago I tried to apply it to the ground I plowed for wheat in the fall before I did any harrowing. In case I could not do that I let it slake in the kiln and spread it on the wheat ground during the winter. This was almost as good for I used the manure spreader to scatter it with. I would fill the spreader as full as possible with straw, set it to run the smallest number of loads per acre so as to cover the ground quicker and then put in what lime I thought would spread the right amount per acre. The third best way if I didn't find time to do it either of the first two ways was to spread the slaked lime from the kiln with the manure spreader in the same manner during the next summer after the wheat was cut. And then if it so happened that I couldn't get it done that summer I would try to do it in the winter time."

"Well, after you applied the lime to a field the first time, when did you make your second application?" was Jim's next query.

"The proper place is on your corn ground after you plow it provided you are going to plow it the next year for oats instead of disking it. By applying it then the preparation of the ground for corn and the three or four workings the corn gets thru the summer thoroughly mixes it with the soil and I know from experience that it helps the yield of corn a little. By the time the ground is turned over for oats and back again for wheat the lime is mixed all thru the soil and in ideal shape for your clover crop."

"I notice you have been buying lime the last four or five years instead of burning it. Why are you doing that and what kind are you buying?"

"One reason I am buying is because I can hardly get labor enough for the regular farm work to say nothing of burning lime kilns. Another reason is because in the last few years a lot of companies have sprung into existence that either burn lime or sell ground limestone for agricultural purposes. These companies are located where there are thick veins of the stone that do not require much stripping. They are equipped with steam shovels with which to strip, compressed air drills to drill the holes for blasting and in every way are equipped to handle the stone so efficiently that I have been able to buy lime cheaper than I can burn it."

"Now in regard to the kind; I try to get the cheapest and the way to tell which is the cheapest is to compare the amount of actual calcium in each kind. For instance, 1100 pounds of lump or fresh burned lime, 1600 pounds of hydrated or slaked lime and a ton of ground limestone all have about the same amount of calcium in them. I just got quotations the other day at \$8.00 a ton for lump lime, \$10.00 a ton for ground hydrated lime in sacks, and \$5.75 a ton for ground limestone in sacks or \$2.00 less in bulk. At these values comparing the other two with the lump at \$8.00 the hydrated lime should cost \$5.50 per ton in bulk or \$7.50 in sacks (\$2.00 a ton less).

(Continued to Page 7)



Indiana County, Pa., Farmers, Ages, 70 to 88 Years

Brimstone in the Fertilizer Industry

Sulphur Plays an Important Part in Our Agricultural and Industrial Activities

By Dr. J. G. LIPMAN

Director New Jersey Experiment Station

THERE is scarcely any chemical as important as is sulphuric acid in the industrial life of the United States. It is used extensively in the manufacture of explosives, petroleum products, dyes, ammonium sulphate, aluminum sulphate and a large number of chemical salts and of acids. If is used, above all, in the manufacture of acid phosphate, the most common of our fertilizer materials. It is estimated that our acid phosphate production in 1920 was about 4,500,000 short tons. But since one ton of commercial acid and one ton of phosphate rock are required to make two tons of acid phosphate, it follows that approximately 2,250,000 tons of acid were used in 1920 in our acid phosphate plants. Aside from the manufacture of acid phosphate, sulphuric acid is used largely also in the production of ammonium sulphate, another of our important fertilizers. In view of these facts the readers of the Pennsylvania Farmer will no doubt be interested in a short account of the past and present supply of sulphuric acid and particularly of the importance of sulphur (brimstone) for its manufacture.

The following table, taken from a recent bulletin by Wells and Fogg, shows the growth by ten year periods of the sulphuric acid industry in the United States since 1870.

1870—105,000 tons	1900—1,600,000 tons
1880—425,000 tons	1910—2,700,000 tons
1890—765,000 tons	1920—7,500,000 tons

It will be observed that since 1910 the annual production has practically trebled, a fact partly attributable to the war and partly to the normal growth of the fertilizer industry. In 1918 the demand for sulphuric acid in the making of explosives was at its highest point, hence it may not be amiss to show here how the acid was used in the different industries in 1918. In the following table drugs and ammonium sulphate are included under the heading Chemicals. The amount given for steel pickling also includes that used for galvanizing. The amount quoted under Paints includes that used in the manufacture of lithophone and glue. In the ever increasing importance of the storage battery industry the use of acids in that field is gradually becoming greater and while the amount listed under the heading of Metallurgical does not seem large prospects are that it will be greatly increased.

The demand for the acid to be used in the manufacture of explosives is at present less than when this table was compiled.

Name of Industry.	Tons per year.	Per cent of total.
Explosives	2,700,000	36.0
Fertilizers	2,130,000	28.4
Oil refineries	671,000	8.8
Chemicals	740,000	9.9
Steel pickling	700,000	9.3
Fabrics, textiles, etc.	100,000	1.3
Paints	104,000	1.4
Metallurgical	292,000	3.9
Miscellaneous	73,000	1.0

Total 7,510,000 100
Despite the temporary check, due to the general business depression, the fertilizer industry is bound to grow steadily. In normal years the cotton belt will consume nearly four million tons of commercial fertilizer. The Middle West and the Farther West are rapidly learning to appreciate the value of available phosphates in placing crop production on a more profitable basis. As a result of this the demand for sulphuric acid will also increase, even though the newer methods for making available phosphates without the use of sulphuric acid may become prominent.

Sulphuric acid is made from brimstone, from iron, copper and zinc materials containing sulphur, and from fumes and gases derived from smelters and gas works. From the middle of the last century to the early eighties brimstone was the principal raw material for the making of sul-

phuric acid. In 1882 about 85 per cent of the acid used in the United States was made from brimstone which was imported into this country from Sicily. At the beginning of the present century a mineral known as iron pyrite and imported in large quantities from Spain (Spanish pyrite) began to play an important role in the sulphuric acid industry. In fact, it practically displaced the Sicilian brimstone. By-product acid also became an important source of this material, thanks to the recovery of sulphur fumes from 1895 on at the zinc smelters in Illinois and the copper smelters in Tennessee. At the beginning of the war about 50 per cent of our sulphuric acid was made from Spanish pyrite and only 2.6 per cent from brimstone. Since that time, and under the stress of war conditions, new plants were built to utilize brimstone rather than pyrite, and many of the old plants were remodelled likewise to use brimstone. Thus in 1917 the production of brimstone acid equalled 32.6 per cent of the total output, while Spanish pyrite was used for the making of 22.9 per cent of the total output. A year later the use of Spanish pyrite was still further restricted, namely to 7.6 per cent of the total acid produced, while brimstone was made to contribute 48 per cent of the raw material.

Deposits of brimstone have been located in many places. It is found on the island of Sicily,

phur near Lake Charles, Louisiana, in 1865. Other deposits have been discovered since that time, the most easterly of them at Belle Isle, Louisiana, and the most westerly in Matagorda County, Texas or a distance between the two points of 225 miles.

There are at present three companies engaged in the mining of sulphur by the Frasch or modified Frasch process. They are the Union Sulphur Company, of Louisiana, and the Freeport Sulphur Company and the Texas Gulf Sulphur Company, both located in Texas. Of the three big sulphur companies in the United States, the Union Sulphur Company is the oldest. Beginning production on a large scale in 1902, it was already producing at the rate of 200,000 long tons in 1905. At that time the demand for sulphur was rather limited and the accumulation of large stocks above ground was the result. In 1917 the stocks above ground were equal to about 800,000 long tons, and the production capacity was 2000 tons a day. This capacity was increased to 4000 tons a day during the war and there was accumulated a large reserve of sulphur above ground, estimated at 1,000,000 tons. It is reported by the Bureau of Mines that for an average daily production of 2000 tons a day there are required 4000 barrels of fuel oil and the labor of 800 men. During each 24 hours there are pumped and heated 8,000,000 gallons of water.

The Freeport Sulphur Company began operations in 1913, and by 1917 developed a production capacity of 1500 tons per day. Its sulphur

bearing property is located within three miles of the coast. Mining is carried on over an area of about 520 acres. During the first half of 1918 it was mining crude sulphur at a cost of \$6.15 per ton, whereas the Union Sulphur Company was producing sulphur at that time at 40 to 50 cents less per ton.

The Texas Gulf Sulphur Company controls a rather large area of rich sulphur ore. Actual production was begun only in 1919, nevertheless a large production capacity has already been developed, and the amount of sulphur produced in 1920 is reported to have been larger than that of any other company. It is also reported that the daily production has expanded to 3000-4000 tons a day, and that the total deposit of sulphur is greater than 10,000,000 tons.

When the Texas Gulf Sulphur Company began operations in 1919, the Union Sulphur and the Freeport Sulphur Companies had on hand, above ground, nearly 1,500,000 tons. The normal consumption in the United States had been but 400,000 to 500,000 tons. It was felt, therefore, that there was need for creating new markets for the material. This was accomplished, in part, by displacing Spanish pyrite formerly used in large quantities for the production of sulphuric acid. Now the fertilizer trade is using brimstone acid to a large extent. The rubber and paper pulp industries have also increased their requirements until in 1920 the market absorbed about 1,000,000 tons of brimstone. A still larger market will be developed in time thanks to the use of inoculated sulphur for controlling potato scab and other fungus diseases; for supplying this constituent to crops like alfalfa and clover in Oregon, Idaho, Washington, Northern California; the production of soluble phosphates; the eradication of noxious weeds; the reclamation of certain alkali soils, etc. The development of very vigorous strains of sulphur bacteria by the writer and his associates, and their discovery of practical methods for the inoculation of sulphur on a large scale offer promise of a very material increase in the demand for brimstone and of its successful use for increasing crop production.

The use of manure on small grains results in lodging so frequently that it is better practice to use manure on some other crop and depend upon commercial fertilizers for the small grain crop.



Ready For a Frolic



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PHILADELPHIA, PA., APRIL 30, 1921
VOLUME 49 NUMBER 18

OUR JOB is to serve our readers. Whenever you are puzzled, write to us and we will help you if we can.
—The Editors

Our Deeds shall travel with us from afar,
And what we have been makes us what we are.
—George Eliot.

Vocational Schools

ONE of the most interesting and instructive trips the writer has made in many a day was a tour of Chester, Lancaster and Perry Counties, Pennsylvania, visiting vocational schools in company with the state director of this work, Prof. L. H. Dennis. While we have had some knowledge of and a great interest in these schools we found we had small conception of the valuable work they are doing in the communities in which they are established. Later, we shall publish some account of the schools we visited so that others who do not have detailed knowledge of vocational schools may know what is possible and be induced to establish them in their neighborhoods. Incidentally we feel it right to publicly commend the work and ability of Prof. Dennis. Without doubt, he is the right man in the right place.

Reduce the Freight Rates

REPRESENTATIVES of the Farmers' Union, together with other members of the National Board of Farm Organizations appeared before the Interstate Commerce Commission last week and made an earnest plea for lower freight rates. The delegation represented every part of the United States and the unanimous testimony was that the present rates are prohibitive in many respects; that owing to the present low prices many articles of produce do not bring enough to pay for the transportation. Representatives from the South and West told of the stagnation of marketing because it did not pay to ship hay, grain and some kinds of vegetables, and those from the Pacific Coast said that immense quantities of fruit had gone to waste for the same reason. One representative told an instance of a shipment of cabbage which sold in Texas for \$6 per ton. The freight to New York was \$32 per ton and the cabbage was retailed there at \$130 per ton.

John A. McSparran, Master of Pennsylvania State Grange, argued that the present rates were not only excessively burdensome to the shipper but they operated to decrease the income of the railroads themselves. He said that in the East where short hauls were the rule the competition of motor truck lines had greatly reduced the income of railroads because the cost of shipping by truck was less.

None of the representatives contended that the reduction of rates would of itself remedy the present economic condition of agriculture but it would be a start in the direction of a general

Pennsylvania Farmer

reduction of inflated conditions; that the psychological effect would be to encourage farmers to believe that an honest effort was being made to lower all costs to a reasonable basis. Congressman Wingo of Arkansas said that the great American game today is "passing the buck".

Effort after effort had been pretended and investigation after investigation had been made but in every instance they came to naught because every man and every industry simply "passed the buck" to somebody else. In this instance the railroads say they cannot reduce rates until wages are reduced and labor says it cannot accept less until rates are reduced. The same process of arguing in a circle is found in the steel, iron and coal industries but it is getting no place and is the cause of the present stagnation in business. The farmers at this conference put up a plain straight demand that this foolishness stop and that governmental agencies which were instituted and are supported for the purpose of serving the public in such instances shall begin at once to function in relation to big business as they have in regard to agriculture.

The representatives at this conference also had a hearing on the same subject with the President and asked that the government take summary action to bring to a common basis the deflating processes, and we look for something to be done in this direction. This meeting was another example of the need and the value of the Board of Farm Organizations. There has been sufficient evidence to prove to all reasonable farmers that there is a necessity for a national organization federating all the farmers' organizations of the country.

Signs of Betterment

THERE ARE encouraging signs of social and moral betterment and a return to "normalcy", in some communities at least. This is evidenced by the protests made against so-called "liberal" ideas concerning Sunday observance, amusements, social practices, etc. In many places there seems to be an increased interest in church services and Sunday Schools.

For the past five years the general lowering of the moral tone of the public has given the lawless and the loud-mouthed protestant against restraint encouragement to take and demand more freedom than society in its normal state will allow. The demand of this class for a repeal of what they call "The blue laws" has been most persistent, but up to this time they have not been able to repeal or enact anything that would injure the social structure, and, what is still better, their activities have tended to arouse the sleeping conscience of the better element of society into energetic opposition to their proposals. We have never believed that humanity was going to the everlasting how-woos in any wholesale manner, because the native good sense of mankind usually responds in time to save the race. We will not have any recurrence of the dark ages.

Health on the Farm

SINCE 1900 there has been a gradual decrease in the number of deaths from typhoid fever in the large cities, while during the same period there has been little if any decrease in the death rate from that disease in the country districts. That fact may be surprising to those who have always looked upon typhoid fever as a disease of the populous centers, one which swept thru the cities and large towns taking its toll of human lives but left the most of the country dwellers untouched.

The normal human being values his life very highly but is singularly indifferent when it comes to doing anything to preserve the usefulness of his body or to protect himself from disease. The city man is provided with traffic police to help him get across busy streets but even then he will often risk his life in a mad dash thru the traffic, when if he would wait a few moments for the police to stop the stream of street cars and automobiles, he could cross in safety with other pedestrians. He is in too much of a hurry to spare a half minute to keep himself from great danger but once on the other side he can stop for five minutes to look in shop windows or visit a friend. The average farmer will abuse his own body

and treat himself generally in a way in which he would not allow his horses to be treated.

Few people will take care of themselves unless they are forced to do so. Coal miners cannot be trusted to avoid great risks and the foremen and superintendents have to watch constantly to make them be careful with their own lives. It is probably this queer trait of human nature that accounts in a large part for the decrease in the death rate from disease in the cities without a corresponding decrease in the country. City people are forced to live up to certain standards of sanitation and they are taxed to pay for the provision of good water and adequate sewage disposal systems. Country families must each solve their own sanitation problems and too often these problems are neglected or forgotten.

Spring is a good time to raise one's valuation on his own life and that of the other members of his family and to begin a program of cleaning up the fly breeding places, drying up the damp spots and brightening with sunshine the dark corners in and around the home. There is no reason why the farm home should not be the most healthful place on earth. It has every advantage and a little care and a little extra work will make the country home the ideal health resort unexcelled by any cabin in the mountains or cottage by the sea.

Human life is too valuable to be wasted and the American farmer cannot afford to overlook the danger of disease from open "kitchen drains", and from improper care of his own body, or of accident due to carelessness or foolish trust in a farm animal that "was never known to be ugly". The man who knows that flies carry disease but does nothing to prevent their breeding and who is careless with his own life and the lives of his relatives and neighbors might well be put in the class with those two famous gentlemen, the one who rocked the boat and the one who didn't know it was loaded.

New Jersey's New Laws

THE REPRESENTATIVES of New Jersey farmers' organizations were evidently on the job during the sessions of the Legislature as evidenced by the results obtained. Some of their activities are indicated by the following results:

The bill providing for the prevention of the use of coconut fat in milk, introduced by Assemblyman Sexsmith, of Monmouth, was one of the most hotly contested bills in the Legislature this session. The coconut oil interests employed an able lobby to prevent its passage, and it was opposed by some of the strongest political figures in the state. The State Federation of County Boards of Agriculture, with the co-operation of the Grange, the Dairymen's League, the State Chamber of Commerce and the Women's Federated Clubs worked for its passage.

The ice cream bill, which fixes a minimum butterfat content of eight per cent for commercial ice cream, was introduced by the State Department of Health, and was supported by the Federation, the Grange and the dairy interests.

The Daylight Saving bill, which was strongly opposed by all agricultural interests, passed the House but met with such opposition in the Senate that it was not brought to a vote.

The Rural Police bill, which was strongly urged by the farmers, the State Chamber of Commerce and other bodies, and was opposed by organized labor, was passed over the Governor's veto.

Our Washington Letter

O. E. Bradfute of Xenia, Ohio, Chester H. Gray, of Nevada, Mo., and W. H. Hill, of South Dakota, representing the American Farm Bureau Federation, called upon President Harding, and requested him to appoint a farmer or a farmer-minded man on the Interstate Commerce Commission. The President told them that the appointment would be eminently satisfactory to the American Farm Bureau Federation and therefore to the farmers.

Mr. Bradfute asked that the farmers be represented on the Federal Reserve Board, the Shipping Board and other boards and commissions, by the appointment of one farmer member to each board. President Harding replied that he had already committed himself in favor of recognizing agriculture in making these appointments.

A permanent organization of the National Union of Farm Loan Associations was completed

Pennsylvania Farmer

at a meeting in Washington April 20, with M. Elwood Gates of California, president; Cyrus H. Good, of Pennsylvania, vice president, and W. W. Flanagan, of Washington, general agent. In an address before the delegates from farm loan associations thruout the country, Senator John W. Fletcher, of Florida, declared there is no safer investment in the nation than farm loan bonds. He pointed out the necessity for organizing the national union, warning the delegates that they must be on their guard against attempts to weaken the Federal Farm Loan act. Twenty-five amendments have been offered recently and more will be offered, each one of which is liable to contain a joker that will nullify the provisions of the law. He accused the Farm Loan Board with having attempted to "bluff" the farm loan associations into refraining from aiding the national union, and said he thought the board was making a serious mistake in its attitude toward the loan associations. In answer to the alleged threat of the Farm Loan Board to remove the charter of farm loan associations that contributed to the support of the national organization, Senator Fletcher quoted the law showing that only when an association has become insolvent to the extent of \$150,000 can its charter be taken away from it. William G. McAdoo, former Secretary of the Treasury. In a telegram, said that owing to the fact that the Farm Loan act is in danger of hostile legislation, friends of the farm loan associations were wise to organize to protect the system and extend its usefulness.

A forceful address was made at the opening of the N. B. F. O. meeting recently held in Washington, by John F. McSparran, master of Pennsylvania State Grange, who said the farmer is today a business man with certain things to sell and certain things to buy. He opposed the removal of the surtax and excess profits tax, and referred to the cost plus system that developed during the war as one of the most damnable things in the nation. The same people that demanded cost plus a big profit during the war when our soldier boys were fighting in France, are now asking for the removal of income and excess profit taxes and a general sales tax be added. He said the farmer should recognize his responsibility to help himself.

Secretary A. C. Davis reported that the National Farmers' Union was conducting a larger volume of co-operative business than any other organization in America. Co-operative enterprises of the Farmers' Union have \$30,000,000 invested, and did a turnover of more than \$600,000,000 last year.

The National Milk Producers' Federation at a recent meeting adopted a resolution to make a national survey of cost of producing milk and milk products in relation to the tariff. They are setting up committees in various portions of the dairy territory in conjunction with other organizations which they are inviting to participate, the agricultural colleges and Department of Agriculture, to gather this information, which will be submitted to the committee on Ways and Means.

The funds for the payment of indemnities for reacting cattle slaughtered have been exhausted, and Secretary of Agriculture Wallace has drafted a bill calling for an emergency fund of \$405,000 to pay indemnities for tubercular cattle. Chairman Good is favorable to the passage of the bill and it is believed that it will pass Congress. The American Farm Bureau Federation is also backing the proposition. It looks now as though the work of tuberculosis eradication can continue if this bill is enacted.

HARRISBURG LETTER

The End of the Run.—The Legislature of 1921 is at the end of its run with every indication that its race against the records of appropriation has been won. The figures will not be known for some days, but it seems reasonable to assume that the aggregate of the bills carrying money sent to the Governor will be anywhere from \$125,000,000 to \$130,000,000. Millions are the smallest unit in which the legislators have appeared to think lately and as the value as revenue raisers of some of the taxation bills considered in the wind up is problematical there will be every opportunity for Governor Sprout to demonstrate his ideas in regard to economy. The Governor has made very definite statements in regard to economy and has informed some of his critics that a surprise is coming. On the other hand certain of the legislators were under the impression that the chairmen of the appropriations committees and the Governor were working together so there would be no necessity to reduce the allowances.

At the Front in Highways.—According to the figures on official records at the State Capital Pennsylvania is today building more highways than any state in the Union. Probably 140 of 171 contracts under way when winter began have been resumed and close to 500 miles are under contract with prospect of some thirty or forty new jobs being started within the next few weeks. Probably 100 miles more will be let in May so that by the middle of summer close to 750 miles may be considered in progress.

Secretary Plans Surveys.—Secretary of Agriculture Fred Rasmussen is planning some additional surveys to be made when the results of the apple, tobacco and vegetable surveys are published.

lished. There are still some details to be worked out on the latter, but it is well in hand and will be finished this summer. As a consequence the people of the state will have information authoritative and which can be considered in connection with Federal figures from the census.

Truck People Protest.—Some strong protests against the proposed increase of truck licenses and other regulations which would interfere with the operation of trucks on a different basis than at present. The situation in regard to trucks is that the state wants more money from them because of wear and tear on roads and the truck people contend they are meeting a definite need for transportation and furnishing service which would not be otherwise obtainable by many people.

Fight U. S. Standard.—The United States wheat standard is being opposed by state authorities, growers and shippers as discriminatory. Charges that garlic and other things have been found in Pennsylvania and Maryland wheat have been made and a protest will be entered at the national capital. The cost of the standard is held to be around ten cents a bushel against the two states.

Going to the Doors.—Farmers in many sections of the state have been sending word to the State Employment Bureau that they appreciate what the state is doing to get hands for them, but of late men have been appearing at the farm house doors seeking employment. In other words the farmers of the state are getting the effects of the swing of the pendulum. Four years ago they had to let fields lie fallow because of lack of hands. Now the industrial depression is sending men to the farm.

Licenses on the Back.—Under terms of the Long bill approved by the Governor a day or so ago hunters must wear licenses on their backs and any person violating the game laws or persistently trespassing on farms or annoying farmers may have licenses revoked. Regulations against securing of licenses under assumed names are also made.

Bills Approved.—The Governor has given approval to the bills forbidding misrepresentation and requiring State licensure of stallions and jacks, which also requires an annual registration at a \$10 fee. The Bureau of Animal Industry is placed in charge of the registration. Another bill provides that articles of food sold in standard containers that are original packages are not to come under the commodities act, while a companion bill relates to summary conviction.

Acresage Holds Up.—From all accounts the wheat acresage is going to run only about three or four per cent less than last season, but at the same time the mild winter will materially reduce the area that would be plowed under. Abundance of labor may head off some of the rumored reduction of acresage in other crops.—Hamilton.

NEW YORK LETTER

Milk Bottle Losses.—The Syracuse Milk Producers' Co-operative Association is trying to get consumers to co-operate in reducing the losses from broken, stolen or lost milk bottles. These losses amount to \$200 worth a day or \$73,000 per year. The average life of a bottle they find to be about three weeks. A fire in Dunkirk this week destroyed a half million milk bottles.

Churches Have a Value.—Welcome, a little community in Otsego County, closed its only church. Now they find there is no market for their farms, since buyers look elsewhere when they find no church privileges. The community is discussing reopening the church and starting a Sunday School.

Guernsey Club Expands.—The Cayuga County Guernsey breeders believe a sale does much to establish a breed. They have some fine animals and will arrange a consignment sale as a means of building up their industry.

Loyalty Demanded of Teachers.—A measure designed to promote and protect Americanism has passed both legislative bodies and will probably be signed by the Governor. It requires that no teacher shall be licensed whose instruction includes teaching of doctrine that organized government shall be overthrown by force, violence or unlawful means, or where the school or course is conducted in fraudulent manner.

Anesthetics in Animal Surgery.—Dr. W. S. Hollingworth, of Utica, is to address the State Veterinary College on the use of anesthesia for animals. The college has long urged their use and has experimented considerably in best methods.

Bovine Tuberculosis.—Eradication of this disease is making satisfactory progress in Tompkins County. Of 235 animals so far tested but 28 reacted. The last six heads tested located but one case.

Milk Given Children.—On learning that the fund to provide 550 children of the Syracuse schools with milk was exhausted the Producers' Co-operative Association of that locality promised to donate 140 quarts daily until May. Each school of the city has its weighing machine and measuring rod. Of the 26,500 children, 16,500 have been weighed and one-fifth of them found to be undernourished. Within the year 5856 quarts of milk and 25,424 lunches have been distributed.

Sixty Percent Syrup Crop.—The State College announces the 1921 maple syrup crop of New York to be 60 per cent of normal. It is believed the crop will all be sold. Prices have ranged from \$1.25 per gallon to \$3.00 and on maple sugar from 22 to 25 cents a pound.

Agricultural Buildings.—The Legislature gave no new appropriations this year to erect agricultural buildings at the state college, as the work will go forward on last year's appropriations. A sum of \$1,350,000 was allowed for yearly expenses, some items being cut while others were given more liberal funds. In no way many farmers believe, is the state's agriculture more surely protected and developed than thru the college.

Further Fruit Injury.—The last cold wave did perhaps more damage than previous ones. Sweet cherries and peaches were hard hit. Sour cherries were also cut badly. Apples have suffered considerably.

New Farm Data.—In the absence of the regular statistician, Prof. G. F. Warren, of Cornell, has compiled some interesting farm data. The number of people on the farms on February 1 was two per cent less than a year previous; the previous year saw a decrease of three per cent, and the year before 4 per cent. There are now 785,000 on the farms, or a third less than in 1840. About 40,000 men and boys left the farms last year to do other work, and 16,000 left other work to go to farming. The net movement cityward was 24,000. The number of boys reared on the farms each year is enough to cause an increase of 8000 men per year, if all remained on the farm. Last year's movement away from the farm was three times that number. Eleven per cent of the habitable farm houses are vacant. About 27 per cent of the farms are in need of extensive repairing; only 68 per cent are adequately fenced; 20 per cent need artificial drainage; over 50 per cent need lime. To make all these improvements would cost an average of \$20 per acre, or 417 million dollars, or 10 per cent less than the total 1920 crop value, or one-fourth the total value of the farms.

NEW JERSEY LETTER

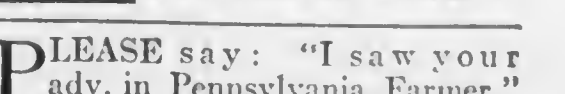
Rural Scholarship.—The New Jersey State Department of Public Instruction calls attention in its last edition of "The Education Bulletin" to the fact, that the American Country Life Association is offering to rural school teachers a \$200 scholarship, which may be used in any normal school or college. It was stated in the publication, that a letter received by the State Department from Dr. Kenyon L. Butterfield, president of the association, read in part as follows: "The association recognizes the rural school, as one of the most important institutions dealing with country life, and hopes by this scholarship to add to the interest in rural education, to create better prestige, and to stimulate higher standards in this work. In offering this scholarship, the American Country Life Association aims to discover teachers, who are effectively adapting the rural school to its new conditions, and to find the methods by which this adaptation is being made with a view to stimulating the special preparation of teachers for the field of rural education."

Frost Damages.—Frost recently experienced in New Jersey will seriously affect the strawberry crop this year, according to a report of the State Bureau of Markets. It was added, however, that strawberry sections of the southern part of the state have not suffered as much damage as other sections of New Jersey. It was also said that it is probable that the best time to buy for canning purposes will be when Virginia, Maryland and Tennessee are at the height of their shipping.

Soil Report.—State Geologist H. B. Kummel has announced the publication of a bulletin of the geologic series, which is a survey of the soils of the Millville area in South Jersey. The section included in the report extends from Bridgeton and Cedarville east to the Atlantic Coast, and from North Vineland, Weymouth and Egg Harbor City south to Cape May. It comprises all of Cape May County, most of Atlantic and Cumberland Counties, and very small portions of Salem, Gloucester and Burlington Counties. The report, which is of a scientific nature, consists of a general description of climatic and soil conditions within the area, and a classification and description of soil types, accompanied by a large colored map and photographic illustrations. It is based upon field work done by soil experts from the New Jersey Department of Conservation and Development and the Bureau of Soils of the United States Department of Agriculture working in cooperation.

Exhibition Buildings.—Three new buildings that will be of vast value to the raisers of crops in the state service as well as the rank and file of farmers are to be erected at the exhibition grounds of the Inter-State Fair Association in Hamilton township, Mercer County, before the opening of the fair next September. The structures will cost approximately \$80,000.

Daylight Saving.—Daylight saving has gone into effect in Trenton, Morristown, Princeton and other central Jersey points. The plan will be continued under local municipal ordinances until September 25, the last Sunday in that month. The freight stations in Trenton on the lines of the common carriers will be opened under the plan and closed the same way.—Kelly, Trenton.



MILL'S JOE

By
M. ROBERTS
CONOVER

"IT'S nothin' but drudgery from mornin' till night, Mill. Sometimes I wonder what it's all for. I get up in the mornin', work all day, go to bed at night and get up the next mornin' and do it all over again. What fer? Just to get enough to eat an' to wear, an' not much else. What's it all fer, Mill, this what we're doin'? I'm tired of it. I wish—I wish I had a thousand dollars an' I'd—I'd—spend it," concluded the man lamely.

"What'd you spend it fer?" asked his wife curiously.

"Oh, havin' a good time, goin' somewhere, seein' something, havin' a gran' old time."

"Where'd I be?" asked the woman jealously.

"You?" her husband rubbed his forehead reflectively for a moment. "You? Why, I spose you'd be right here."

A dull wave of red rose about the woman's neck and flooded her face to her hair, but she didn't look up from the work she was doing. The man watched her narrowly for a few minutes but she neither moved nor met his eye. He stepped gingerly across the floor and stood over her a moment, but she remained with her head bent toward her work. The man bent over her and scanned the drooped face, his long nose almost touching a lock of her brown hair.

"Pooh! Mill, you didn't suppose I meant it did you? You didn't suppose I was goin' to run off an' leave you, did you? Pooh! Pooh! Thought I was goin' skylarkin' off with someone else and leave you here to home did you? Well, well, you ought to know me better than that?"

He patted her awkwardly on the back of her faded house-dress, and chuckled her under her quivering chin.

"No, no! If I go off to spend a thousand dollars, I reckon I'll take you along to see how it's going to be spent."

There was a swift change over the worn features of the woman.

"Joe, ain't it just nonsense to talk about spendin' money when we ain't got enough of it to last us fer necessities? How'll I fix the sweet potatoes fer dinner, roast or baked?"

"Better blee 'em, Mill. They'll proloug out futher that way. Yes, I spose it's right silly followin' my 'magination like that, but I git quite a lot o' fun out of it sometimes especially when we're feelin' kind o' down like we are now. But I don't leave you home alone Mill. I always take you along. You ought to be used to my foolin' by this time. Want to go to town with me Mill? I have to have some nails for the shed. We'll be back by dinner time."

The woman brightened perceptibly.

As they sat in the little old unpainted buggy behind the old gray horse, Mill remarked that the country looked dreary.

"Yas, yas. It's dreary enough this time of year. What d'ye say if we pertend we've got that thousand dollars? It'll kind o' be somethin' to think about while we're ridin' along?"

"Joe, you gettin' foolish?" asked his wife with a wry face. The jolt of the buggy over the stony road hurt her back and made her irritable.

"No, only pertendin' to keep up my

spirits," said her husband and laps-ed into silence which he broke after several minutes.

"We could have dinner at the Riordan."

"Huh!" exclaimed his wife.

"And go to a show afterwards."

"Huh!" repeated his wife.

"An' we'd put old Polly in the livery stable. Hank Witten would be glad uv that. He don't git many horses since aufymobiles has got so numerous."

"Joe!" His wife poked him in the side with her elbow. Why don't you git an airship? Long's you're talkin' in?"

"An' so I will, an' so I will. Aufymobiles 'I' be out o' date before long. We'll have an airship."

"Well, you was only wishin' fer a thousand dollars, an' that wouldn't buy an airship. Why don't you wish more effectual, Joe?"

How a Farmer's Wife Earned a Dollar

In a little brown church near the Chenango River There's a Builder's Class, whose heart strings quiver. They decided to earn a dollar one time And tell how they earned it in sort of a rhyme.

Now, as you know, I'm a farmer's wife Which some folks think is an easy life, But I'll tell you what, when it comes to work It's no place for a first-class shirk.

To prove this fact I'll tell you how I earned my dollar with a dairy cow. My husband bought one which he gave to me And I surely thought I should quite rich be. For he said the calf should also be mine If I'd teach it to drink and save his time.

In ignorance I thought this an easy task, Such thoughts now are entirely past. I spoiled two pails, spilled ten quarts of milk, Ruined three dresses (one partly silk). In trying to teach that stubborn calf To drink his milk without spilling half.

He bit my hand nearly off my arm And caused the doctor to come to the farm; He broke his rope and ran away And I chased him 'round nearly half a day. Over field, and garden and flower-bed 'Til I surely thought I was nearly dead.

I said to myself, "Before I sleep I'll sell that calf to the first man I meet." I sold the calf for a ten-dollar note And decided next time I'd prefer a goat. For after I paid the doctor's fee, Bought some pails and a dress for me, To take the place of one I spoiled, To say nothing of the hours I toiled, I had a dollar to show for my work. Do you think I earned it, or did I shirk?

—D. A. H.

"Well, how much would effectual be?"

"Oh, ten thousand dollars maybe, I don't know. I do know it's about time we stopped this foolishness though."

"Guess 'tis. Here's town."

The horse trotted down the main street past the line of parked cars, and turned into a side-street where Joe made him fast to a post yet standing for just such unusual occasions as this. It was ten o'clock. "I'll be ready in about an hour," said his husband.

His wife spent a half hour looking in the windows and watching the people as they passed before she went to the post office to ask for their mail. But in the meanwhile, Joe had been there and taken it. The big clock above her struck once. It was half-past ten. She stood near the wall resting first on one foot and

then on another. The post office was a good place to see folks.

At the right of the desk was a collection of notices of things lost and found on the streets of Merton. She took a curious sort of pleasure in reading them over. Afterwards she would let herself think how the woman must live who had lost the gray fox muff, or the girl whose lap-dog had strayed.

A man approached with a piece of paper in his hand and affixed it below the other notices. When he went back within the enclosure behind the mail-boxes, she read it. Someone had lost a one thousand dollar Liberty Bond. She didn't stop to read who for at that moment the door opened and a short man puffing under three heavy mail bags bustled past her and on into the regions beyond. Presently the clerk who sorted the mail waved something toward her. It was a small magazine which came once a month and contained interesting stories and some household hints. Mill brightened as she took it and went out.

That night they ate their supper

"I wasn't foolin', Mill. There must be somethin' in wishin'. I've unexpectedly come into a thousand dollars."

His wife stared at him incredulously and then asked without belief, "How'd you come by it?"

"Mill, I don't know as I'm tellin'. I know. That's enough. You're proper cross tonight," and he sat back with a peculiar smile about his lips.

Her curiosity got the better of her pride and she continued to ask question after question to no avail, getting only the cryptic reply, "If you knew, you wouldn't be askin'."

Mill was puzzled, then worried. When her husband slept that night, she tossed restlessly. She seemed to see again below a long list of notices of articles lost and found, the words, "Lost a Liberty Bond, Denomination, One Thousand Dollars."

In the morning she stood by her kitchen table nerving herself while her husband had just gone out with the ashes. When he came in, she said, "Joe, someone lost a thousand dollar liberty bond on the street in Merton yesterday morning after ten o'clock."

Her husband rattled the covers of the stove and made no reply. She looked at him and repeated her statement, but he bent unheedingly over the stove adjusting the drafts. Her voice rose.

"Joe Binkley, someone lost a thousand dollar liberty bond on the street in Merton while we were there!"

Her husband glanced half way round.

"Mill, that brick is cracked in the fire-box. You'll have to write to Bonson for another," he said.

Mill stood rigid convinced that his evasion of the subject confirmed her suspicions.

Joe diligently brushed the ashes from the top of the stove, as he said, "Mill, you won't forget it, will you? He can bring it over when he comes Tuesday. This brick'll give way some morning when I'm makin' the fire and I'll be in a fix. I'll pay him for it and for that zinc I got last week when he comes."

Mill went dully into the pantry for some oatmeal. Her head ached and she felt wretchedly alone. Once within the pantry she clinched her hands high above her head, in a strangely appealing attitude.

"I'd rather have anything else happen than to have Joe keep what didn't belong to him," she muttered. She held herself together with an effort, and went back to the kitchen with the steamer in one hand and a bowl of porridge in the other. She could see her husband making his way toward the barn with his head bent slightly forward.

When he returned his manner was curiously depressed. They had eaten breakfast almost in silence and she was just rising from the table when someone knocked, and as Mill called, "Come in!" a tall, sharp-featured woman entered.

"I've brought you a piece of news! The Pikers are in bad luck again. Eph Piker lost a thousand dollar liberty bond in Merton the other mornin'. What with Willie's broken leg and their barn burnin' down, they are in bad."

Mill clutched the back of the chair. Her eyes rested upon her husband who had focused his gaze upon a tiny piece of browned fat left in the center of the bacon dish. He said:

"Eph ought to advertise fer it. Was it registered?"

"No, it wasn't registered, and he's advertised fer it in the paper and in

the post office and he's put the notice on it."

Mill's Joe got up suddenly.

"Pleasant weather we're havin', Jennie," he said and went out.

Her neighbor went on her way and Mill stood looking out at the window watching her husband as he swept off the path toward the smoke-house with the stubby old porch broom. In her heart an agony of love and humiliation. She went to the door and impelled by her anxious curiosity called to him.

"Joe, what can we be doin' fer the Pikers?"

Joe stood up a moment and rubbed his head.

"I don't know, Mill. I hadn't thought much about it."

"It's full time you did!"

Mill's eyes burned down at him from her height on the kitchen porch. In all her married life she had never felt such a feeling toward him. She leaned against the door post until she could brace up under it.

A half hour later, her husband drove down to the blacksmith shop. Mill made her way to the attic. Up under the eaves was an old tin lard pail. She worked its close fitting cover loose and felt into its contents.

There was the deed for their land, the insurance paper, a bag of old coins, and an old photograph of her husband's mother. These she had expected to find, but there was also a long brown envelope of stiff paper that was new to her. She laid back the flap and drew out a thousand dollar Liberty bond. She sat still with it in her lap trying to feel that the world hadn't turned over, that the glimpse of sun-lit field thru the attic window wasn't a mockery, aching for warmth, and hope and trust, and then she returned the other things to the lard can and went down stairs with the stiff envelope in her hand.

Dinner consisted of boiled potatoes and some cabbage re-heated from the day before, but it might have been a king's feast as far as the spirits of Joe were concerned. He had entirely recovered his buoyancy and heedless of his wife's stony calm, talked of his plans for their little farm for another year, of the new cow he was going to buy and the hog-pen that was to be rebuilt. He went out clatting, whistling "The Lark's Wedding," on his way to the barn to sort apples.

Mill dressed herself quickly and walked the three miles to town. She made her way to the town hall, and to the office of the town's chief of police. Placing the bond before him, she said:

"The bond that Eph Piker lost day before yesterday has been found. I've brought it over."

The officer took the envelope from her opened it and compared the enclosure thoughtfully with something in his book, looked slightly puzzled and asked:

"What is your name, Madam?"

Mill told him.

"You found this bond?"

Mill gulped an instant.

"Yes," she said.

"Very well, I'll hold it right here in the safe and communicate with the loser."

Mill went home, tired but relieved. When her husband came in she had prepared a delicious supper of stew meat and vegetables. She warmed up his slippers. She moved the light to a better angle that he might read. She was solicitous and tender with a yearning tenderness in her face and voice. She might have been his

mother and he an erring boy. When he dozed over his paper, she leaned and stroked his hand hungrily.

"I'd do anything for you, Joe, anything under the sun that's right. I'd die fer you. But I can't have you doin' anythin' that ain't strict honest," she whispered huskily.

He stirred in his sleep but did not waken.

When she came down next morning, her husband was rounding off a tall hamper of apples.

"I was just thinkin', Mill, I'd take these apples over to Piker's. It'll sort o' reimburse them fer their bad luck."

She hesitated a moment. They were not so replete with provisions. She had taken the steps toward righting their loss.

"I don't know as I'd do it, Joe—"

she hesitated, stifling her throb of pain at Joe's substitution. "No, Joe, I wouldn't bother," she said with a peculiar air.

"Well, I'm a botherin'," said her husband firmly as he fitted the cover to the basket. He looked out of the window a moment.

"Here comes Jennie Clay again," he said.

Mill opened the door and admitted her guest.

"I've come fer a pie's makin' o' lard," she announced standing excitedly in the middle of the floor, "and I've got news that's more'n surprisin'. It's the Pikers. They've got back the Liberty Bond Eph lost."

"Is that so?" asked Mill dryly.

"How'd they get it back?" asked Joe clinching the fastening of the basket.

"How'd you spose?" Jennie looked from one to the other of her hearers.

Mill's gaze searched her husband thru and he met it with a wondering stare.

"Give it up, Jennie!" said Joe.

"Martha Piker found it in the lining of Eph's top coat right where he'd put it thinkin' it was goin' into his pocket," she announced.

Mill started, but Joe said: "It don't surprise me none. Eph's lost things in his clothes before. He advertised everywhere and almost accused his hired man of stealing his gold watch that his Uncle Sol Piker had given him one time, and then went home and found it in the toe of his rubber boots where he'd dropped it by accident."

Mill moved mechanically toward her lard bowl. There was a worried flush on her cheek bones.

"Is one pie's makin' enough, Jen?" she asked.

When she had gone, Joe twirled the basket of apples toward the space under the window. "I've a mind not to take them over, after all, Mill," he said. "It about serves him right. The idea o' advertisin' all over for somethin' in his top coat!"

He went over to the clock-shelf and reached for his wallet.

He took out a roll of money which fell loosely apart as he pressed it into his wife's hands.

"Mill, this is your birthday," he said, and then stood looking at her, striving to interpret her look of alarm.

"Mill, what's seemed to all you lately? Is anything wrong with your liver? You've seemed to be broodin' like as if there was somethin' on your mind. What's between us girl?" he asked anxiously.

Mill's lips parted for speech. She leaned forward summoning her wits. "Joe," her voice came tense and strange thru her lips. "Where'd you get that money?"

Her husband looked at her still wondering at the painful tension of her.

"Why, Mill, that legacy from Uncle Arthur Swim's estate has been paid. I'm ownin' a thousand dollar liberty bond and a little cash beside. I kept it from you, because, well just because I felt like keepin' it to myself, till I felt like tellin' it."

Mill went forward toward Joe with a strange appeal in her manner. She dropped on her knees beside his chair and stroked his hands repeatedly. She felt like saying something but she couldn't speak. Her husband soothed her gently.

"Why Mill, you're all upset over it! Your man don't give you such a present very often does he?"

Suddenly Mill sat up with a strained look.

"Joe, harness the horse! I've got to go to town—let's both go to town right away!"

But Old Father Elephant had a great big heart and that heart spoke right up loud to him and said, "Now you forget all that Old Man Leopard has done against you and protect him from Old King Lion and Tawney Mane and that will heap coals of fire upon Old Man Leopard's head and punish him more than anything else possible in the Great Jungle."

Wasn't that a 'stordinary thing for I do? Oh grief! why can't there be some way for me to wash my broad back and get rid of those mean, stinging, biting insects?"

Old Father Elephant shook his huge ears mournfully and with a long face started deep into the fastness of the Great Jungle, seeking to bury his troubles in its dark recesses.

He had not gone far, however, before he heard a great snarling and roaring and before he had time even to think, Old Man Leopard backed out of the deep thicket and right against Old Father Elephant's sturdy legs and close behind him, roaring with all their might, came Old King Lion and his son Tawney Mane. Evidently, Old Man Leopard was in trouble and there were no prospects of his getting out of it very soon. All of this pleased Old Father Elephant immensely for Old Man Leopard was his greatest enemy and had tormented the good Father Elephant tremendously. Now he was in his power and he had but to raise his foot to kill him himself or push him into the reach of Old King Lion and Tawney Mane.

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Then Old Father Elephant turned around to see what had become of Old Man Leopard and would you believe it? There was no Old Man Leopard but in his place stood a fairy sprite.

Old Father Elephant was so astonished that he said not a word, but stood with open mouth. Soon the fairy sprite spoke and oh, how she did praise Old Father Elephant until he fairly blushed from his extreme modesty. His heart swelled and swelled until he thought his chest would burst and the, oh joyful moment! the little sprite presented him with a nice long trunk so that he could throw water all over his broad back as much as he pleased and drive away the little biting, stinging insects.

Now wasn't that a most 'stordinary story, my little folks?—S. K. S.

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"Slow now! You're in a hurry! Want to spend that money I suppose. Well, I don't know as there's anythin' to hinder this afternoon. We can go to the movies, before we come back."

That evening, Mill came softly down the attic stairs and when her husband came in from the barn, she dished the warm supper with a smile on her face. She looked up at him happily.

"Gee, it's sort o' nice when things look prosperous, ain't it? You say you've got a thousand dollar Liberty bond as well as cash?"

"That's the right of it, Mill," said her husband complacently.

"Joe, you'd better see that Liberty bond's in a safe place. The bank would be about right fer it."

"P'raps it would, Mill. P'raps you are right about that," replied Joe Binkley thoughtfully.

A Story for Children

How Old Father Elephant Got His Long Trunk

OLD FATHER ELEPHANT was in great trouble, for in all the Great Jungle, he could find no waterhole deep enough so that he could wash his broad back. Oh my! how the insects did bite and he could not begin to reach the pests. "Truly," thought Old Father Elephant, "I might as well be dead for I can't enjoy myself in the Great Jungle with all my troubles, yet I don't want to leave it. What shall I do, what shall I do? Oh grief! why can't there be some way for me to wash my broad back and get rid of those mean, stinging, biting insects?"

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(Continued Next Week)

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Farm range, prize winning Buttercups. Investigate this wonderful variety. Write for circular.
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TALKS WITH THE BOYS

To the Boys:

A long time ago I read a story about one of the Presidents, I think it was Grant, which told how he learned an important lesson while still a boy. Probably many of you are familiar with the story and can check me up if I go wrong. As I remember it the boy Grant got a job chopping wood with some older men. They were working on a hill along a big river and it was a great pleasure to the boy to watch the boats going up and down and to long for the day when he would have a chance to travel on one of them.

It seems that the wood choppers were divided into groups of two each and it happened that the boy's partner was an old man who was quite feeble and could not chop very fast. The boy would make the chips fly twice as fast as the old man and he was very proud that he could beat the experienced man. However, it was not long before he began to realize that there was something wrong. Altho he could chop twice as fast as the man, at the end of the day the pile of wood which he had chopped was not nearly as large as the old man's. He was completely mystified for a while and could not account for the strange situation. Finally it dawned upon him what the trouble was. When he stopped to load the boats on the river and dream of the day when he would perhaps be captain of one of them the old man kept right on working. He worked slowly but by keeping at it he accomplished more than the boy who worked very fast but who stopped often.

I am sure that the lesson this boy learned back in the early days long before the Civil War is one which will help us all a lot if we resolve to profit by it. There are many people who do not learn it until they are too old to profit by it. Nearly every man looks back to his boyhood days and thinks of a lot of things that he wished he had done, things that perhaps he started to do but did not keep at long enough to do any good. You are all familiar with the fable of the rabbit that was beaten in a race by a turtle. The turtle was very slow and the rabbit was fast but the turtle kept moving and the rabbit stopped too many times along the way. He didn't keep "chopping wood."

We have some good letters this week and after you have read them and decided to write one yourself I would like to have you answer a few questions for me. What is wrong with this page? Someone says that it isn't big enough. That surely is true but how about making it better before we talk about making it bigger. Perhaps when we have made it a little more attractive we will be able to get more room. Someone says pictures. That sounds good. Don't you think that the page would be a lot more attractive if we had some good pictures of our boy friends to brighten it up. Send us some of those good pictures of your pets, of interesting places and things and of your work on the farm. We will all be interested in them.

We cannot promise to publish all that are sent in because there are many good camera pictures which do not make good "cuts" when made up to print in a paper, and of course we do not have all the space we

would like either, but we want to see what you are doing as well as to read about it in your letters. Let's have some good letters with pictures—illustrated letters we shall call them.

Sincerely,
The Editor

LETTERS FROM THE BOYS

Dear Editor—I live on a farm of 132 acres. I have four sisters and five brothers. I am in the fifth grade and have to go two miles to school. We have two horses, four mules, five calves, 14 sheep, 21 little lambs, six cows, four pigs, 93 little puppies, 150 chickens and some geese.

We have a tractor and two gasoline engines—one of them is a 12-h. p. and is used for chopping; the other is a 24-h. p. and is used for pumping water. We have electric lights and an electric washer—in fact, we have all kinds of farm implements.

I harrow and roll the fields and help father in many ways. I always go to the post office to get the mail.
—John C. Burdge, Hunt, Co., Pa.

Dear Editor—I am fourteen years of age and am in the eighth grade in school. I like to go to school; it is about a mile and a half from our home. I have one older brother and a younger sister. We live on a place of three acres. We keep chickens and hogs. I help raise the chicks and have some of my own. We are going to get a larger place where we can raise more fowls. I have some money in the bank and am going to put more in this spring.
—John J. Sheely, Adams Co., Pa.

Dear Editor—I live on a farm of about 65 acres and I like it. I used to be a city boy, but I would rather live in the country. We take the Pennsylvania Farmer and like it very much. It is nice to come up from the field and do your work at night and then go in the house and sit down to read the Penna. Farmer. I always like to read the letters the boys write. I am going to build a bird house and some houses for pigeons.
—Howard Johnson, Cumberland Co., N. J.

Dear Editor—I am eleven years old and go to school every day. I am in the fourth grade and have eleven books to study. I have one brother but no sisters. Last year I earned five dollars for not missing a spelling word.

I live on a farm of about fifty acres. We have four cows, one heifer, two horses and a little Holstein calf which I tend. Last October we had a litter of fourteen little pigs and these we raised. We have now dressed eight of them which weighed nearly 1300 pounds and the other six we will market in about a week.

My father likes chickens and his favorites are the brown Leghorns. We have about 200 hens and get as high as eleven dozen eggs per day.
—Lester S. Derr, Union Co., Pa.

Dear Editor—I like to read the Pennsylvania Farmer, especially the Boys' Page and the serial stories. I am twelve years old and go to school. I missed a few days last fall helping to fill the silo. We have a 44-acre

farm, a 60-acre pasture and some woodland in Haycock mountain which is between three and four miles from here.

My father has three horses and some cattle. We have a touring car and a sedan. I have a lot of guinea pigs and made more profit with guinea pigs than with rabbits. I like to trap and this season I caught a skunk and three muskrats. I have a liberty bond and war saving stamps. I belong to the Junior Soldiers of the Soil and to the Liberty Bell Bird Club.
—Kenneth Fretz, Bucks Co., Pa.

Dear Editor—I am ten years old and have been making my home with James W. Hinton and family for two years. We have a farm of 105 acres and have four horses, six cows, three calves, and a registered Guernsey bull. We also have a collie dog named "Sammie." I go to Sloan's Hollow School. We have an automobile and a gasoline engine and I like to work on the farm very much. Arlynn Downing, Bedford Co., Pa.

Dear Editor—I have been living on a farm for the last ten years but now expect to move to the city. Our farm of 100 acres includes 50 acres woodland and five small meadows. Our home is located near a creek which runs all summer. We have three horses, nine cows, five calves, three white rabbits, 100 geese and 500 chickens.

I am thirteen years old and am in the eighth grade in school. I have one sister older and one sister and three brothers younger than I am.

I like to cultivate the ground and also to plow. I forgot to say that there are two wells on our farm, one near the house and one by the barn.
—Benjamin Sonnerstein, Bucks Co., Penna.

Dear Editor—I am eleven years old and live on a farm of 240 acres. I go to school every day and am in the sixth and seventh grade. There are eight in our family.

We have four horses and a pony, sixteen cows and eight calves. Father gave me a calf to raise as my own. We ride the pony to get the cows in at night in the summer.
—O. F. Ferris, Wyoming Co., Pa.

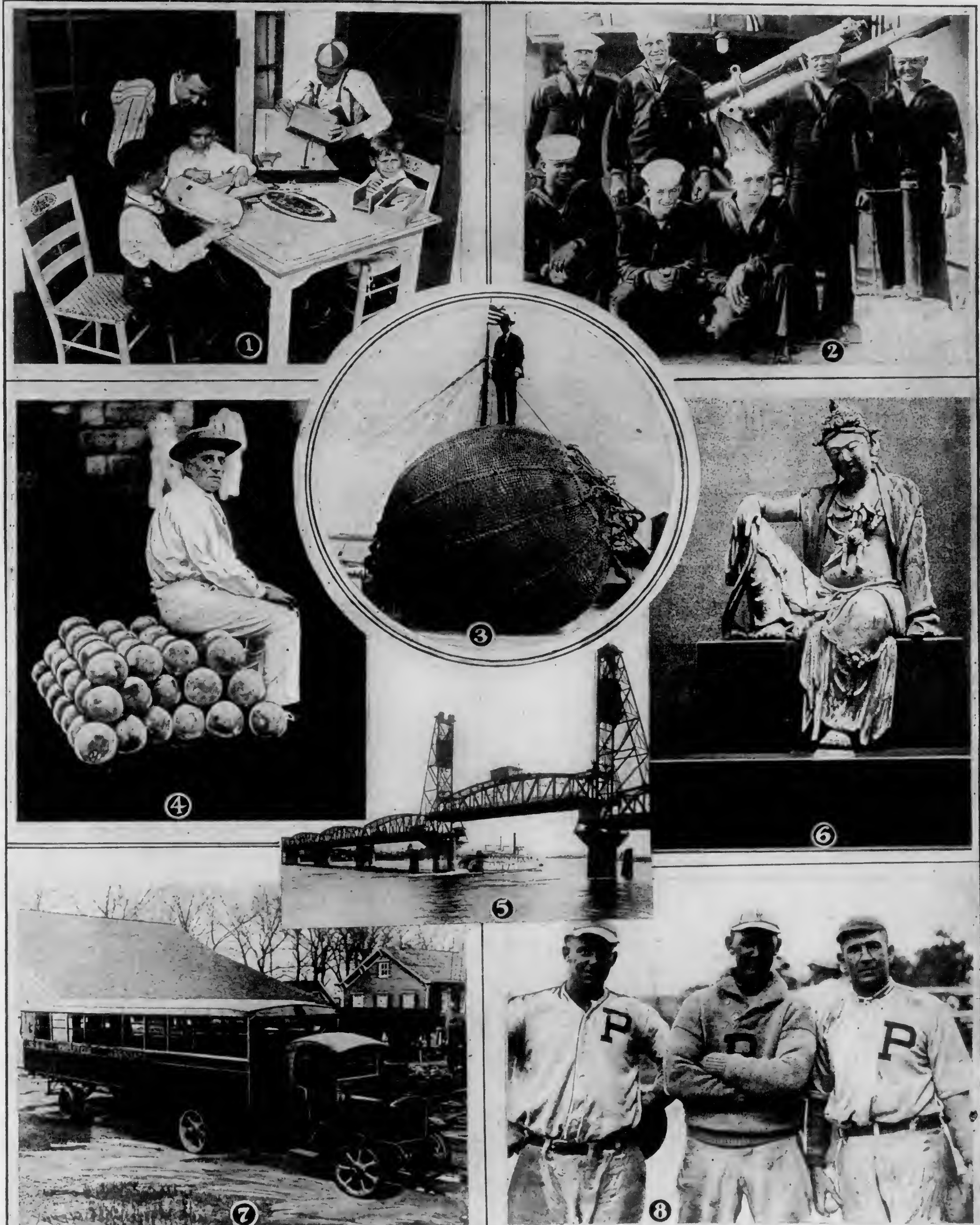
Dear Editor—I am eleven years of age and live on a farm in Lancaster County. I go to school and like it very much. I am in the fourth grade and have seven books. This is the last day of school, but I have not gone to school for a while because I am just getting over the measles.

My father works in the sawmill up on the hill. My brother who is fourteen years of age raises tame pigeons. One of the males died and his mate found another partner among the wild pigeons in the barn. We have 14 pigs, five cows, four horses, eight steers, three geese and about 200 chickens.
—J. M. Musser, Lancaster Co., Pa.

Dear Editor—I am interested in the Boys' Department. I am twelve years old and the oldest boy in the family. I live on a sixty-two acre farm. I like farming and I go to school. I am in the seventh and eighth grade and have a mile to walk.

During the summer vacation, I roll, rake, and mow. I also help haul in the crops. I milk two cows and I like trapping but that didn't pay very well last winter.
—School Boy, Bucks Co., Pa.

PASSING EVENTS IN PICTURES



1—Four little invalids of the Masonic Hospital, learning to make their own toys.
2—Yankee tars set world's record for anti-aircraft gun fire and prove the worth of warships.
3—One of the pontoons which will be used in an attempt to raise the wreck of Spaulding's famous yacht "Isis" from the bed of the ocean.

4—No, you're wrong—they're not grapefruit or cantaloupes, but merely Adammer cheese, a product of the Netherlands.
5—This bridge spans the Columbia River, connecting the states of Oregon and Washington.
6—An antique Chinese statue of Compassion, now in the Boston Art Museum.

7—The largest Bus in the world. It is 60 feet long and has a carrying capacity of 150 medium-sized persons.
8—Witherow, Ring and Brugg, three of the Phillies players, who recently demonstrated their prowess in the "good old game" during a match with the Washington team at Jacksonville, Fla.

(Photo. Copyright by Underwood & Underwood.)

The market on old potatoes is ruling slow and dull with supplies more than ample for the market's requirements at this period of the year when the southern new potatoes are coming in. There are still some 35 cars of old potatoes on track here this morning in the Reading and the Pennsylvania delivery yards most of which were not what might be termed fancy. The market is ruling at 80¢ per cwt. for the best, down from 80¢ to 81 per cwt. with some at \$1.10, while one car of Pennsylvania potatoes in sacks sold at \$1.25 per cwt. These hauls are being sold at 75¢ per cwt. for the best, 73¢ to 75¢ per cwt. for the bulk. The new crop of potatoes from Florida are selling at mostly \$0.75 to 7.25 per barrel for No. 1, with No. 2a mostly \$0.50 to \$0.64 per barrel, some \$2 to \$3 per cwt. sold here this morning at these prices.

[illegible]

Eggs showed some recovery over the price paid for about two weeks, some receiving 25c dozen. Potatoes continue their decline, and the market is expected to slip except a few in the hands of dealers.

Eggs—2½ to 28c. per dozen.

Butter—Country, 50¢ to 60c lb.; separator, 60¢ to 65c lb.; milk, 10c qt.

Poultry—Hens, 24 to 30c; 50c lb.; dressed, \$1.25 to 2.50 ea.

Vegetables—Potatoes, 5 to 8c ½ pk.; 20 to 40c lb.; cabbage, 3 to 10c lb.; lettuce, 50c lb.; cauliflower, 10 to 15c lb.; green beans, 5c lb.; onions, 5c lb.; lima beans, 20c qt.; snap beans, 10c lb.; qt. lard, 14 to 18c lb.; cashew nuts, 10 to 15c lb.; raisins, 10 to 15c lb.; spinach, 10 to 18c ½ pk.; hams, whole, 40 to 50c lb.; sliced, 40 to 80c lb.

Fruits—Apples, 25 to 50c ½ pk.; straw-berran, 25c.

Retail Grain Market—Wheat, \$1.75; corn, 80c; rye, 75c; rye, \$1.40; bran, \$1.75 cwt; middlings, 25c.

Wholesale Grain Market—Wheat, \$1.25; corn, 80c; oats, 50c; rye, \$1.25; bran, 83c per ton; middlings, 40 per ton.

Butter unsettled; receipts, 4904 tubs. Creamery higher than extras, 71 1/2¢ to 42¢; do extras (92 score), 41¢; do firms (88 to 91 score), 40 1/2¢; packing stock, current milk, No. 2, 31¢.

Eggs steady; receipts, 25,016 cases. Fresh gathered, extra firms, 25 1/2¢ to 29 1/2¢; firms, 26 1/2¢; State, Penna. and nearby Western 26 1/2¢; white, extra firms, 33 1/2¢ to 41¢; do do brown, extra firms, 34 1/2¢ to 40¢; do do brown and mixed colors, firms to extras, 27 1/2¢ to 31 1/2¢; storage packed, extra firms, 30 1/2¢ to 33 1/2¢; do do, 28 1/2¢ to 32 1/2¢.

Cheese unsettled; receipts, 3479 boxes. State, whole milk, flats, held speculative, 27 1/2¢ to 29¢; do average run, 24 1/2¢ to 26¢; do fresh extras, 26 1/2¢ to 21¢; do average run, 19 1/2¢ to 21¢.

Livestock nominal; no quotations; dressed, steady and unchanged.

Vegetables—Mich., sack, \$1.75 @ 1.85; York State, bbl., \$1.75 @ 1.80; sweet potatoes, hmptr., \$2 @ 2.25; green peas, Fla. crate, \$1.50 @ 2; onions, h. g., 100-lb. sack, 75c @ 80c; corn, 40-lb. sack, \$1.50 @ 1.75; French, 30c; Brussels, 20c @ 25c; artichokes, \$2 doz.; shallots, 40 @ 65c doz.; watercress, 25 @ 35c doz.; kale, \$1.75 @ bbl.; lettuce, 3-lb. basket, 45 @ 50c; do 10-lb., 1.25 @ 1.50; cauliflower, hmptr., 20 @ 25c; radish, 12 @ 16 lb.; parsley, 40 @ 75c doz.; radishes, 25 @ 35c doz.; cucumbers, h. h., \$5 @ 6 crate; mushrooms, \$2 @ 2.25 basket; carrots, 15 @ 1.50 hmptr.; rhubarb, Mich., \$5 @ 75c, bunch.

chickens no Leghorns bring the fine price of 65@75c lb., with the Leghorn brooding chickens at 60@65c lb. Old roosters are slow at 18@22c lb., and ducks are also lower at 28@32c. Dressed poultry is also easier at 31@40c for fowls and 25@27c for roosters.

Eggs—The market on eggs is ruling about steady with prices at this writing as follows: Penna. and other nearby current receipts, 50¢ doz.; nearby extras, 52½¢. Fancy selected and candled nearby eggs are selling out at 35¢ @ 36¢ per doz. Southern eggs are selling at 34¢ @ 35¢ per doz. Western eggs are quotable at 25½¢ @ 26¢, with western extras firsts at 26½¢ per dozen.

LANCASTER PRODUCE

—April 23, 1921.

The markets were well attended this morning and an abundance of fresh vegetables were on hand. Eggs opened at 32 cents but held later at 30 cents generally. Asparagus opened at ten cents a bunch and held to 10 and 10 cents a bunch. The quotations:

Butter and Eggs—Country butter, 50¢ @ 55¢ lb.; creamy butter, 60¢ lb.; eggs, 30¢ @ 32¢ per doz.; creamery eggs, 40¢ @ 42¢; loose eggs, 40¢ @ 50¢ each.

Poultry—Chickens, dressed, 32¢; broilers, 35¢; turkeys, 40¢ @ 42¢.

Vegetables — Asparagus, 10¢ @ 15¢ lb.;

of hay and 4 cars of straw. We quote: Timothy hay, No. 2, \$22.50@23; No. 3, \$20.50@21; sample, \$17@19; no grade, \$14@16; clover mixed hay, light mixed, \$21.50@22; straw, No. 1 straight rye, \$19@20; No. 1 wheat straw, \$17.50@18.

Bran slightly higher. Car lots, including sacks, soft winter bran, in 100-lb. sacks, per ton, \$27.50 @ 28.50; spring bran, in 100-lb. sacks, per ton, \$26.50 @ 27.50.

Wheat—Quotations follow: No. 2 red winter, \$1.48 @ 1.53; No. 2 red winter garlicky, \$1.39 @ 1.44

Corn—Quiet and 1c lower. Car lots, in export lots, per bu., No. 2, 76½¢ 76½¢; No. 3, 73½¢ 73½¢; No. 4, 71½¢ 71½¢.

Oats—Firm and ½¢ higher. Car lots, as to location: No. 2, white, 51¢ @ 51½¢; No. 3, white, 50¢ @ 50½¢; No. 4, white, 46½¢ @ 47¢.

Market very flush and altho business is good at the close, trade was slow early in the week. Surplus extremely heavy and distributors' have all their cash tied up in manufacturing plants. The April zone is 8 per cent milk in 200-mile zone is \$2.10 per 100 lbs.; 3.6 per cent is \$2.34 and 4 per cent milk, \$2.50. May rate will be 20c higher or \$2.30 per 100 lbs. for fluid 3 per cent milk in 200-mile zone. Receipts of milk and cream in 40-quart cans for the week ending April 23, 1921, were as follows:

	Beef cattle.	Sheep & lambs.	Hogs.
Totals for week	2366	6314	9170
Previous week	2329	7567	9393
Calves—2519 as against	2168	previous	
week.			

Butter—Receipts, 1719 tubs. There was little trading and with lower outside advices and general pressure to sell prices here declined 4c on both solid-packed creamery and exports. We quote Solid-packed

Our Business Letter

COMPETITION for feeder cattle has waned as a result of the performance of the fat cattle market and reports of losses, especially by those cashing in heavy steers, are more frequent. Values declined during the past week but there is little increase in the margin between stockers and feeders and fat cattle. Some Wisconsin buyers again outbidding the packer market. The movement to the country from 63 markets during the last three months is 26.7 per cent below 1920 which in turn showed a decrease compared with the preceding year.

From Whence Come the Hogs?	Wheat Markets Harden
<p>Hog markets are overwhelmed with numbers, the combined total for the year to date being now almost equal to that of last year. At the same time weights remain high. If the run continues at the present rate it will soon overtake that of last year and the price outlook for the summer market will not be encouraging. Early winter estimates upon the hog population evidently</p>	<p>After reaching a new low point on the crop, wheat prices developed firmness as a result of the refusal of the growers to sell on the lower market. Cash wheat which seemed abundant and was steadily decreasing in price suddenly became scarce at some of the markets. In spite of liquidation by growers for nearly two weeks, stocks were not increased and clearances from North Amer-</p>

Milkers and Springers

Milkers and springers constitute a market class on most of the livestock markets but they are especially prominent at South St. Paul, Minnesota dairymen buy large cows usually carrying considerable flesh and already in milk known as "milkers" or "cows" due to freshen soon which are known as "springers" and take them to their farms, where they are milked as long as they are producing heavily and then returned to market. The same practice is followed to some extent by eastern dairymen. Sometimes cows showing considerable dairy breeding are also used in this way.

There was an ominous quietness in tobacco market matters owing largely to outside influences, it was claimed. For some time it has been alleged that an intrigue of influential persons in the market had been working to depress prices. A few weeks ago the attempt of packers to unduly depress prices was detected and now it is known that the same is more or less general in scope. This movement is following prices down to such a point that it is low but possibly to \$7 or \$8 per cwt. or lower, but if growers will ignore confederate offers and await the time when tobacco is needed a fair price will be obtained.

There has been a considerable amount of hay of poor quality arriving at Pittsburgh market during the past week. It is a difficult matter to realize even the prices quoted. No. 1 timothy and standard are disposed of readily, but the other grades show an accumulation which cannot be placed. Market dull. Straw receipts very light but demand is likewise, altho arrivals can be placed at quotations.

A little better feeling on oats, altho not enough to warrant heavy shipments while

Clover, cash, new, \$12.50; April, \$12.50; October, \$9.40
Alfalfa, new cash, \$13.50;
Timothy, cash, \$3.05; April, \$3.05; May, \$3.05.

April. The price for three per cent milk remains \$3.28 per 100 pounds and 7.1 cents per quart for basic quantities, with an in-

Baled Hay and Straw—Receipts, 60 tons

Altho the strong probability of the passage of the emergency tariff has

iled to stimulate a big increase in
 wool buying, the undertone is more
 confident and the softness of the last
 few weeks may disappear. Net
 changes in price have been small for
 some time. The pooled wools are
 fairly well cleaned up but some
 pools held over in private hands are
 being forced upon the market thru
 bank pressure. Advances on the
 new clips of western wool range from
 2 to 15 cents on the choicest sorts

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READERS' OPINIONS

Stop, Look, Read and Think

Do you realize that you are unjustly affected by after the war conditions? That you have not been properly protected thru this period of readjustment. That everything has been done to reduce the cost of living regardless of whether the farmer sank or swam? You were urged into increasing production on your farms by being told that there would be an unlimited market to dispose of your surplus on the other side of the Atlantic. Then after your crops were harvested, your stock ready for market and your dairy products in storage you were told that your market across the ocean would be limited on account of the financial condition of our prospective buyers.

Do you suppose that these conditions were unforeseen? Were you protected against outside opposition by a reasonable protective tariff on your products? Now I can see no reason why we should let other nations who produce under different conditions regarding the price of labor and other important items set our prices on farm products any more than we should let them do so on manufactured products. It is my opinion that we should keep up our standards by protecting all our industries including agriculture with a reasonable protective tariff. Agriculture is the backbone of the nation and cannot be carried on successfully without protection any more than any other industry. And it certainly is no worse to place a tariff on products which we can produce than on those which we are compelled to buy from other countries.

Do you realize that the importation of wheat, potatoes and dairy products from Canada, and of hides and meats from South America, and the importation of other products from these and other countries affect your prices? Are you satisfied with your conditions? If not take the matter up with your legislators in Washington. The present administration promised us before election that it would do something to help the farmers thru this period of readjustment, and now it is up to us to see that they live up to their promise.

Sit down at once and write to your Congressman and Senators and ask them to use their influence and vote towards placing a protective tariff on your products equal to that which is on products which you have to buy. Don't put it off. Write today. Tomorrow may find you occupied with other thoughts and matters of importance, and this being of great importance to you should not be neglected. — Gideon T. Williamme, Tioga Co., Pa.

A HOME FOR RURAL TEACHERS

Having taught eighteen terms in rural schools and having spent my whole life in the country, I am vitally interested in country boys and girls. It is at the risk of seeming behind the times that I advance the opinion that the problem of rural education will never be solved wholly by consolidation. Any one who thinks it will, should spend a winter in old Chataqua County. After encountering some of our New York state blizzards long distance transportation would seem vastly more complicated.

Perhaps no one but teachers realize just how important is a home for

the woman who teaches the country school. I believe that eventually the rural "teacherage" will hold a place in the solution of the present problem equal to, if not greater than the consolidated school. It is unthinkable that country schools will ever be wholly abandoned and many sections that have been consolidated have been forced to establish branch schools in the rural districts. In such cases there is still a homeless woman to be provided for and many farm homes are so situated that it is impossible to make her at all comfortable in them. My own is one of these. We had a dear little teacher in our district a few winters ago who came near not being able to find a place to stay. Being a former pupil of mine, I was especially anxious to offer her a home but it was impossible; I had more work than I could do without anything extra, even if I had had ample room which I did not.

At present I am teaching my seventh term in my little school here and I am living with a woman with whom I used to stay some years ago. I realize that I am very fortunate in being so well cared for but she will not live always and a "teacherage" here would be highly desirable altho many districts need one far worse. Perhaps this would mean added expense but not to so great an extent as most people imagine. Under the present system the wage must be sufficient to cover a board bill which, in some cases, is certainly exorbitant.

At first thought not all advantages of the "teacherage" will be evident but really they are almost innumerable. If a home were assured better teachers would be more easily secured, and any teacher could be a far better and more useful one if she lived in a home of her own, right on the premises. How I have longed for a home within reach of my pupils where I might be perfectly free to invite them for evening parties and holiday festivities! A place where they would annoy no one and where I might bring them just as often as I wished! It is quite desirable in these days, too, that the school property be not left entirely unguarded so much of the time as it is at present.

No matter how good the social life of the community may be a "teacherage" could not but prove valuable and enjoyable to the boys and girls and in many places there is a dearth of good times for young people of school age.—Mrs. E. M. A. Chataqua County, N. Y.

DAYLIGHT SAVING

Now that Daylight Saving has taken the same grave as John Barley-corn I feel that it is the duty of all good thinking and law abiding citizens to bestow their gratefulness upon those men who voted down that act of insanity. We thank the 142 men who cast votes against it in the Legislature.—J. B. Pihla, Co., Pa.

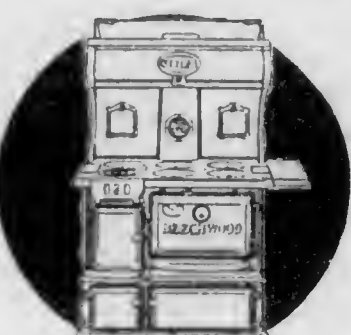
County Note

Union Co., Pa.—Oats seeding will be finished soon and the usual acreage will be sown. Much seed has been plowed for corn which will be planted soon after May first. Some farmers are hauling manure on soil for corn. Efforts are being made to have our farmers plant largely of one or two varieties of corn after having found the varieties which yield best in the county. Some farmers treated oats seed to prevent smut, and demonstrations to show how this can be done were given at several farm sales.—J. N. Glover.

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Enjoy your 1921 "Ranger" at once. Loan money for the small monthly payments on our Easy Payment Plan. Parents often advance their children. FACTORY TO RIDER wholesale prices. Three big model factories—4 styles, colors and sizes in our Ranger line. Delivered FREE on 30 DAY TRIAL. Select bicycle and terms that suit—cash or easy payments, 60, 90, 120, 180, 240, 360, 480, 600, 720, 840, 960, 1080, 1200, 1320, 1440, 1560, 1680, 1800, 1920, 2040, 2160, 2280, 2400, 2520, 2640, 2760, 2880, 3000, 3120, 3240, 3360, 3480, 3600, 3720, 3840, 3960, 4080, 4200, 4320, 4440, 4560, 4680, 4800, 4920, 5040, 5160, 5280, 5400, 5520, 5640, 5760, 5880, 6000, 6120, 6240, 6360, 6480, 6600, 6720, 6840, 6960, 7080, 7200, 7320, 7440, 7560, 7680, 7800, 7920, 8040, 8160, 8280, 8400, 8520, 8640, 8760, 8880, 9000, 9120, 9240, 9360, 9480, 9600, 9720, 9840, 9960, 10080, 10200, 10320, 10440, 10560, 10680, 10800, 10920, 11040, 11160, 11280, 11400, 11520, 11640, 11760, 11880, 12000, 12120, 12240, 12360, 12480, 12600, 12720, 12840, 12960, 13080, 13200, 13320, 13440, 13560, 13680, 13800, 13920, 14040, 14160, 14280, 14400, 14520, 14640, 14760, 14880, 15000, 15120, 15240, 15360, 15480, 15600, 15720, 15840, 15960, 16080, 16200, 16320, 16440, 16560, 16680, 16800, 16920, 17040, 17160, 17280, 17400, 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The Pennsylvania Bureau of Markets

One of the Service Bureaus of the State Department of Agriculture

By J. C. GILBERT
Acting Director.

BUREAUS OF MARKETS are of comparatively recent origin. Government assistance to agriculture until within the past few years has been confined to what may be called production work.

The present U. S. Bureau of Markets was organized by an act of Congress in May, 1913, as the Office of Markets to which the following year was added "Rural Organizations".

In Pennsylvania the first attempt on the part of the Department of Agriculture along marketing lines was embodied in an act of the Legislature, approved July 17, 1917, providing for the establishment of a Bureau of Markets in that Department.

When the Department of Agriculture was reorganized by an act of the Legislature, approved May 8, 1919, provision was made for a Bureau of Markets and its powers and duties were outlined in brief form.

On July 9, 1919, a Bureau of Markets Act was duly approved which is fully consistent with the outline in the act reorganizing the department.

Under this later act which repealed both the former acts mentioned, the bureau is now being conducted.

The following are listed as powers of the bureau:

- 1—Investigation of marketing farm products including the costs of marketing.
- 2—The gathering and distribution of information on supply, demand, prevailing prices, commercial movement of farm products including quantities in common and cold storage.
- 3—Assisting in organizing and conducting public markets, and co-operative and other associations of producers, distributors and consumers.
- 4—Investigation of transportation and storage conditions affecting the marketing of farm products.
- 5—To take such lawful steps as may be deemed necessary to prevent waste of perishable products.
- 6—In co-operation with the Bureau of Standards of the Department of Internal Affairs may establish standard containers for farm products.
- 7—Establish and promulgate grades and standards for farm products and certify that shipments comply with established standards.

The reader can readily see that the powers of the bureau are broad and that its work covers practically all phases of the handling of farm products. Farm Product is defined as: "any agricultural or horticultural product, any fresh or salt water food product, or any product designed for food or feed purposes manufactured or prepared principally from any agricultural or horticultural product or products".

Taking up the outline given in the law let us see what the bureau is doing:

General Investigations

A realization of the growing importance of the co-operative association movement was followed by an investigation of the situation of this state. Bulletin No. 341 "Farmers' Co-operative Associations in Pennsylvania" was written to give to the farmers of the state the essential facts concerning co-operation.

The public markets of the state have been surveyed and the results will be published in a bulletin now being prepared. This survey shows some examples of very faulty local distribution. There are some public markets that seem to be functioning efficiently. The features of these which stand out as particularly noteworthy will be discussed in the forthcoming bulletin.

Under the head of investigations the bureau has co-operated with State College in making surveys of the apple and vegetable industries of the state. The data collected is already showing that much needs to be done to improve the marketing of our fruit and vegetables. One of the points brought out prominently is the need

for standardization of packages used in commercial handling as well as the need for standardization of grades and methods of packing.

Market Reporting Service

Perhaps the most outstanding feature of the work of the bureau is its Market Reporting Service.

This service has eight branch offices and a central supervising office at Harrisburg which also operates as a distributing center. The branches are located at York, Lancaster, Allentown, Easton, Scranton, Wilkes-Barre, Erie and Pittsburgh.

The work of the branch offices is the collection and distribution of local, state and national market news and reports.

By a co-operative arrangement with the U. S. Bureau of Markets loops off the government leased telegraphic system are extended to the Lancaster branch offices. At Pittsburgh the United States and Pennsylvania bureaus have a joint arrangement. The western circuit of the United States bureau's telegraph passes thru that office.

In these offices telegraphers take from the wire each day reports of the movement, supply, demand and current prices of the principal farm products from the important producing sections and the large consuming markets. These reports

the weekly papers. Any one desiring any of the reports by telegraph can secure them by paying the telegraph charges.

The Lancaster branch office offers an example of the kind of service which the bureau can render the public. At Lancaster is located an important livestock yard which handles a very large percentage of the stock fed by the farmers of Lancaster and surrounding counties. The most important work of the reporter at Lancaster is reporting the livestock market at the yards.

This work has been done so well that the Livestock Exchange uses the reports of the bureau representative as its official figures. The farmers know that the reports printed in their local papers are correct. The U. S. Bureau of Markets at one time had a reporter at the Lancaster market but was compelled by lack of resources to discontinue. Now the United States Bureau of Markets uses the reports of the Pennsylvania Bureau of Markets. They consider the arrangement so satisfactory that plans for its continuance are being made at this time.

(To be Continued.)

HINTS FOR FLY FIGHTERS

The ant is said to be more numerous than any other animal but in the section of country where the Pennsylvania Farmer circulates no other animal causes as much annoyance and trouble as the house fly, though some parts of New Jersey may give first place to the mosquito. In the good old summertime every good housewife traps it, poisons it and swats it; then she swats it, poisons it and traps it, and still it comes. Finally zero sweeps down upon us and then it crawls away into the crevices and holes of the buildings and walls, there to await the time when balmy breezes come again. The winter retreat becomes a tomb for most of them but many survive, to emerge and begin again the renewal of their race.

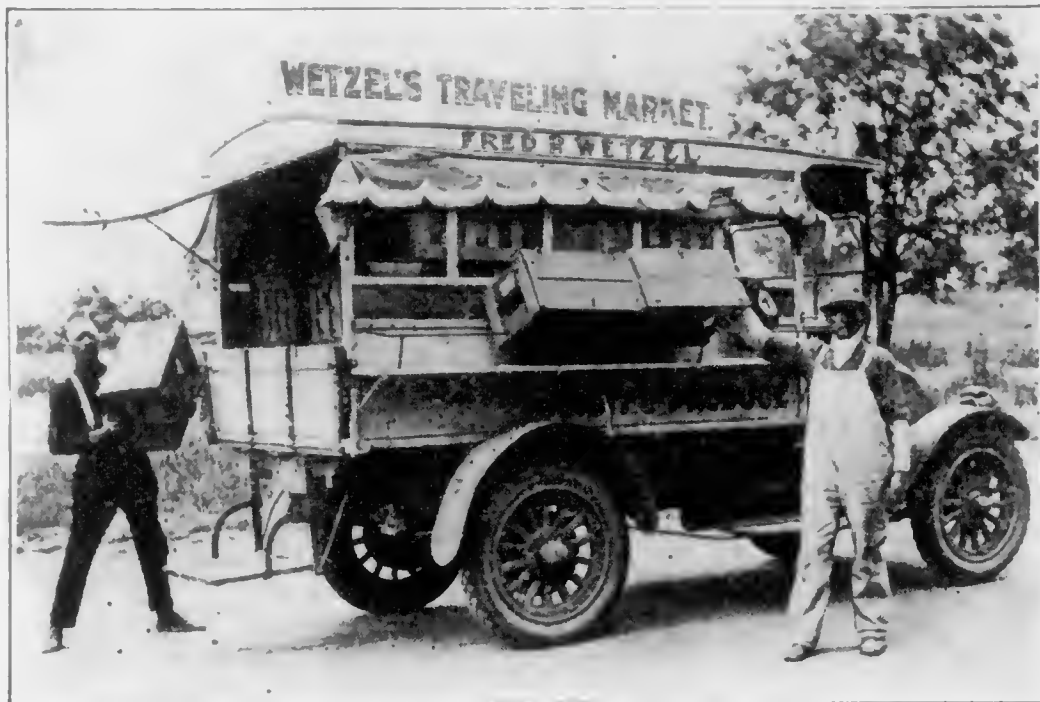
Multiplication is very rapid with them and did they have no enemies but the good housewife, she would find herself overwhelmed with an avalanche of them long before the frosts of autumn came to her relief. The dozen or two about your house in April become thousands in June, millions in August. Therefore it is very important to kill the dozen or

two in April and to keep after them during May. They will breed in almost any filthy place. It is claimed that ninety per cent of them come from in and around horse stables. Having been born in filth the fly seeks out and thrives in filthy places. Especially does it delight in the wastes thrown out from dysenteric and typhoid cases. Having loaded itself from these places it will go, with malice great towards the human kind, to the lips and face of the babe in the cradle, to your plate, to your milk pitcher, to your butter plate; leaving there for your appetite the load of disease germs it has acquired. No agency in nature is better adapted to transport freight of this kind. Do you wonder that it is called the typhoid fly? Suppose some tubercular person expectorates near your home. Before he is out of sight the fly is there and soon tries to share his find with you. This is not nice talk but one cannot use nice talk when discussing flies any more than he can if discussing the Russian Bolsheviks.

If you have read this far you might be interested in knowing what to do to get rid of some of them. You can do nothing, I think, to completely rid your premises of them though I have read that large sections of country in England are absolutely free from flies as a result of half a century or so of fly fighting by all the people.

Were I to take a week off to lead in a campaign against flies I would say "we will begin in the cellar." Clean out thoroughly all decayed vegetables and trash. Then clean it again and scatter lime freely for probably some places have been

(Continued to Page 9.)



This Truck Does the Retail Marketing for a New Jersey Community

are sent to all the other branch offices daily from the Harrisburg office together with reviews of conditions in the markets and shipping sections of the state. The local reports in each district consist of daily reviews of both wholesale and retail prices and conditions.

In planning this reporting service about a year ago the plan for distribution for the market information gave the bureau much concern. Having only a limited amount of funds available it seemed impossible to develop a general mailing system from the branch offices for not only would this call for extensive supplies, duplicating equipment, addressing machines and postage but a large force of clerks to handle the work.

The service was offered to the newspapers and almost without exception they welcomed the idea of having the reports for their columns. The branch office men prepare only enough copies of the reports for the newspapers in their districts and all requests for market information are answered by naming the papers in the locality of the inquirer which carry the reports.

At the present time the circulation of the papers in each reporting district will total between 75,000 and 100,000 which means that the reports have a circulation of between one half and three-quarters of a million each week.

In addition to the regular reports special marketing information is sent to the newspapers including embargo notices, cold storage reports and other information of interest to growers and handlers of farm products. Weekly reviews of conditions, state and national, are prepared for

Soils and Fertilizers

Conducted by Dr. J. G. Lipman

Our readers are invited to send us their problems on soils and fertilizers and they will be answered by Dr. Lipman in this column.

POTATO FIELD

I plowed over two acres of sod this spring, and intend to raise potatoes. The soil is good, sandy loam, and I will not use any fertilizer until plants are about six inches high. I contemplate applying a 3-10-2 commercial fertilizer on side of plants, then covering up with hoe. Is that a good method? In the case of tomatoes, it worked wonders.—A. M. Morris Co., N. J.

Potato Field.—Delayed applications of commercial fertilizer have certain advantages as well as certain disadvantages. The advantages lie in the fact that the soluble chemicals, making up the bulk of the present day commercial fertilizer, may injure the young plants and that they may be partly leached out of the soil before the crop is ready to use them. On the other hand, commercial fertilizer, properly used at planting time, stimulates seed germination, encourages bacterial activities and makes possible the more regular feeding of the crop during the fore part of the growing season. Something should be said also about the saving of time and labor when the fertilizer is used at planting time.

The best practice must be determined by the nature of the crop, the soil, and of the rainfall in any particular locality. Some crops are more readily injured than others by a strong solution of salts in the soil moisture. Lighter soils offer more danger in this connection than do heavier soils. Where the rainfall is heavy in the spring and early summer a considerable proportion of the fertilizer nitrogen may be lost. All told, potatoes should do fully as well when the fertilizer is applied in the row at planting time provided the total amount does not exceed 1200-1500 lbs. per acre. Beyond that it would be safer to divide the applications. In some of the potato growing sections where large quantities of fertilizer are used up to 2500 and 3000 lbs. per acre only a portion of it is used in the row at planting time, the rest is used as a side dressing. The potato growers in Europe appreciate this fact and practice side dressing whenever the appearance of the crop indicates that it is not being supplied fast enough with readily available plant food.

THE USE OF COMMON SALT ON LAND

Editor's Note.—A well-known agricultural authority recently questioned the advisability of using salt on land as mentioned by Dr. Lipman in answer to a query in the March 26th issue of the Pennsylvania Farmer. The matter was referred to Dr. Lipman who has prepared the following article giving the views of some prominent students of soil problems and citing the results of experimental work on the subject.

The question raised is a legitimate one, for the use of salt has its dangers, as was pointed out by the writer in the issue of the Pennsylvania Farmer of March 26. Indeed, the Old World farmers long ago recognized the uses and abuses of salt. The situation is aptly described by an English writer, Aikman, in his book *Manures and Manuring*, published in 1894. He says (p. 465) "Despite, however, the great antiquity of its use, much difference of opinion seems always to have existed as to the exact method of its action, and as to its merits as a manure in promoting vegetable growth. It furnishes, in fact, a good example of the difficulty which exists in the case of many manures, whose action is chiefly indirect, of fully understanding their influence on the soil and on the crop. In fact, the action of salt is probably more complicated than that of any other manurial substances." He tells us further (p. 469) that: "While, therefore, its unfavorable action has long been known, the fact that there are circumstances under which its action is, on the contrary, favorable for promoting

growth has also been long recognized. The difficulty for the agricultural student is to reconcile these two seemingly contradictory experiences. For the English agriculturist the subject possesses especial interest, since in England it has been in the past most generally used and its action most discussed since the time of Lord Bacon, who discusses in his writings the action of solutions of it on different plants. * * * Its action has been found to be most favorable when applied along with other manures and not alone. Applied along with nitrate of soda, as is commonly done, it doubtless increases the efficiency of the nitrate. Some plants seem to be undoubtedly benefited by salt; of these flax may be mentioned. The application of salt to plants of the cabbage tribe seems also to be highly beneficial. On mangels, along with other manures, it has also been found to have a very favorable effect. But with many crops its action has been proved to be less favorable. * * * Lastly, the rate at which it may be applied will naturally vary. From one cwt. and even less, up to six cwt. or even more, has been the rate at which it has been commonly applied in the past. From what has been said, it will be seen that it is more likely to exert a favorable influence when applied only in small quantities."

Storer; one of the old American authorities on soils and fertilizers, tells us (*Agriculture*, edition of 1889, Vol. II, p. 16) "Until a comparatively recent period it was impossible to comprehend the conflicting statements about the use of common salt that were published every day. One farmer found it a valuable manure; a large number of observers, perhaps the majority, could not per-



An Attractive Group of Farm Buildings

ceive that they derived either benefit or damage from its use. * * * It has often been noticed, even in localities where salt has been found to do good service as a fertilizing agent when ploughed under, that top-dressings of it seldom increase the crops, and that they were often distinctly hurtful. One case has been reported where 9 cwt. of salt strewn upon a Saxon acre had no visible action upon either wheat or rye, while it killed young clover. In general, it is agreed that care must be taken to use salt sparingly, and to apply it at appropriate seasons, as when neither seeds, nor sprouts, nor young plants are at hand to be injured. Instances are on record where more than 3 cwt. to the Saxon acre diminished the beet crop, and more than 4½ cwt. diminished the yield of potatoes. In some places 1 or 2 cwt. to the Saxon acre, applied to rye, gave the best results, while in other situations the best rye crop was got with 6 cwt. In this instance, an application of 9 cwt. diminished the crop and 12 cwt. lessened it still more. A barrel of salt to the acre, for wheat, is one English formula. Quoting from American experience Storer goes on to say that market gardeners in the vicinity of Boston have found salt of advantage to cabbages, cauliflowers, tomatoes, celery, horseradish and onions. Its action on melons was, on the other hand, at all times injurious. He also quotes a southern planter to the effect that: "Salt makes cotton bear longer in the season, and stand drought better; it increases the quantity and improves the quality. It acts equally well on corn, oats and other grains, and it toughens wheat straw so that there is less waste from ears breaking off when the crop is cut."

A more recent American authority (Wheeler, *Manures and Fertilizers*, 1913) states that: "The old and modern writers on agricultural chemistry

and on general agriculture agree that marked benefit to farm crops often follows the application of sodium salts, though reference is commonly made to sodium chloride (common salt). * * * The general recognition in Great Britain of the benefit from the application of common salt to soils is evident from the statement by Griffiths to the effect that 250,000 tons of finely crushed common salt are used for manurial purposes in the United Kingdom." Experiments carried out under Wheeler's direction at Kingston, Rhode Island, showed marked benefits from the use of common salt, especially in the case of mangels, radishes, turnips, and a number of other crops. Similarly, on the very sandy soil of the experiment station farm at Woburn, England, salt used as a top-dressing on mangels gave better results than did barnyard manure. The best results were obtained from a mixture of 1 cwt. of nitrate of soda and 1 cwt. of common salt per acre. Experiments with sugar beets carried out in Austria in 1909 showed that when common salt was used at the rate of 160 pounds per acre there was not only a marked increase in yield, but also a higher content of sugar in the juice.

The scarcity of potash during the war led many American investigators to recommend the use of small applications of common salt as a means of liberating a greater amount of soluble potash from the soils. Such recommendations were based largely on the favorable results obtained at the experiment stations of Rhode Island, Massachusetts and Maine. Lack of space will not permit the discussion of these experiments at any length. It would be worth while, however, to refer to the conclusions reached by the Maine Experiment Station after a series of investigations covering the period 1915-1918. In Bulletin 277 of that station the author states that: "The addition of 300 pounds of common salt per acre made a small but uniform increase in yield. Omitting the yields for 1915 in which there was no salt plot, the average yield for the plots without potash or salt was 140 hundredweight and for the plots without potash but with common salt added the yields averaged 151 hundredweight."

As to the use of large quantities of salt for the destruction of weeds, also on this point there is much interesting and definite information. For instance, many years of experience have led Blackman to say (*Breeders Gazette*, Vol. 64, p. 311) that applications of salt while the plants are wet with dew or rain will kill Canada thistles both in pastures and cultivated fields. In the same manner we are told by Jones (Vermont Station Report, 1900, pp. 282-286) that: "Salt is the best chemical yet tried for killing the orange hawkweed and when properly used it is entirely effective." Many more experiments and observations of a like manner could be quoted that common salt when intelligently used is a certain means of suppressing the growth of certain weeds. Without going too far afield the writer could refer again to the experimental evidence gathered in New Jersey during the seasons of 1919 and 1920. The experiments in question were carried out on a very extensive scale in Burlington County for the purpose of determining the best methods for the complete destruction of roadside vegetation. The conclusions reached may be summarized as follows: As a rule, 5 to 6 tons per acre are effective if conditions are favorable, that is, when applications are made on a rainy day or when rains occur within a few days, and when all vegetation is cut. Eight tons of agricultural salt will kill all vegetation, except asparagus. For most weeds smaller applications were quite effective. The plant growth observed in these experiments included pigweed, orach, ragweed, asparagus, dandelion, wild strawberry, hawkweed, knot grass, ferns, hardy grasses, poison ivy, five-leaved ivy, sassafras, oak, wild cherry, wild grape, hackberry, blackberry, elderberry, raspberry and ash.—J. G. Lipman.

Does it seem an idle thing,
A pleasant word to speak?
The face you wear, the thought you bring,
A heart may heal or break.

—Whittier.

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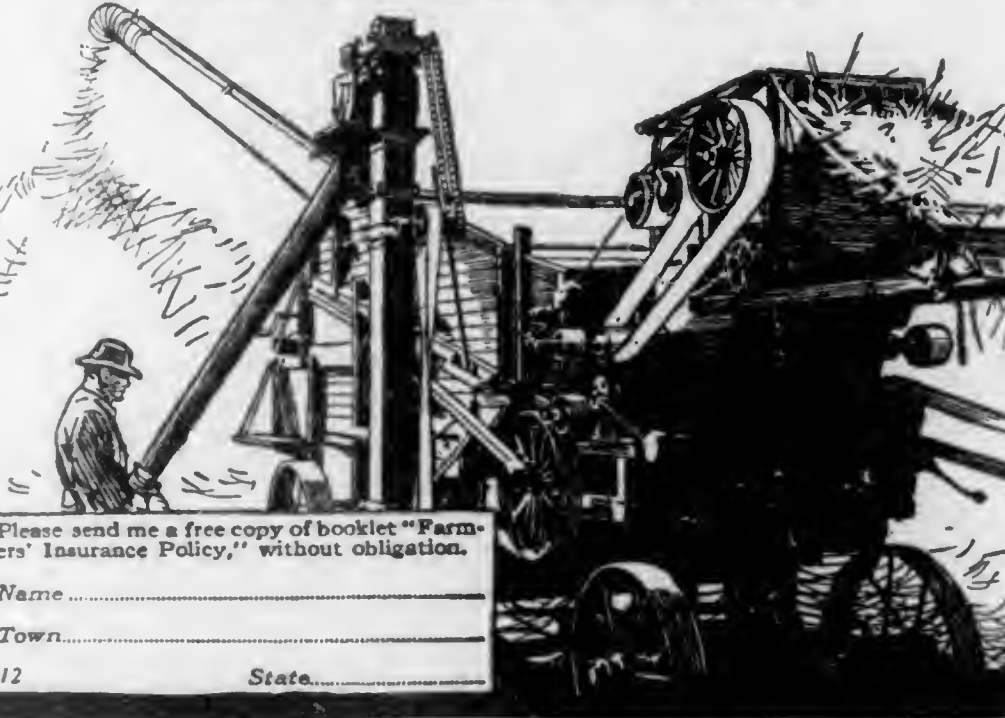
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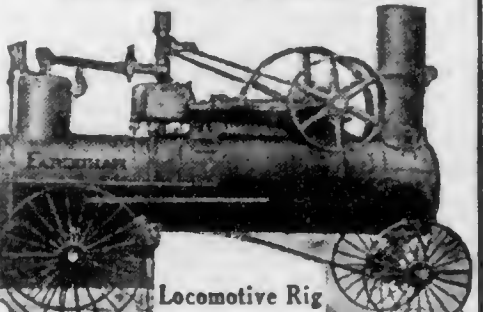
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Light and Power Problems

By A. G. CRUIKSHANK

A NOTED ENGINEER is authority for the statement that 99 per cent of the battery and ignition trouble experienced by the users of storage batteries in automobiles or farm lighting plants, is due to carelessness and negligence on the part of the owners. The battery is a vital part of a lighting plant, and should be given proper care and attention by the user.

A rundown battery is usually due to the fact that the battery has been literally starved, and has not been properly charged and maintained.

Form the habit of inspecting the battery at frequent intervals—at least, twice a week. This can be easily done in a few minutes, and will save a great deal of trouble.

The solution in the battery jars is called electrolyte, and consists of a mixture of acid and distilled water. There is a gradual evaporation of the water, which should be replaced, always using only distilled water, which may be bought at any drug store or ice manufacturing plant, at small cost.

Do not under any circumstances use what is commonly called hard water, or any water known to contain even small quantities of salt, alkali, iron, acid, etc., such as ordinary drinking water and river water.

The solution should always be kept at a point above the tops of the plates and to place the distilled water in the jars that will bring the electrolyte or solution to the proper heights, it is only necessary to remove the vent plug and after the distilled water has been poured into the jars, to replace the vent plug.

Before adding water, what is called a specific gravity test should be made of the solution in the jars, and for this purpose an instrument called a hydrometer is used. To use the hydrometer, remove the vent plug, immerse the rubber hose on the end of the hydrometer in the solution, squeeze the rubber bulb on the end of the hydrometer to expel air, and release the bulb while the rubber hose end is still immersed in the solution. This will cause some of the solution to be sucked up into the hydrometer casing, and the indicator inside of the casing will float in the solution. The specific gravity of the solution will govern the height at which the indicator floats.

You will note a scale of numbers on this indicator, and if No. 1.275 is level with the top of the liquid in the hydrometer casing, it indicates that the battery is fully charged.

A reading below 1.200, but above 1.150, indicates that the battery is less than half charged. If the battery is found to be less than half charged, it is advisable to immediately recharge it.

An exhausted battery is always a result of insufficient charging or wasted current, and if after having been fully charged, the battery is soon again exhausted, there is trouble somewhere in the wiring system, or too many lamps are connected, and an immediate investigation should be made, and the trouble corrected. Never put acid into the battery jars, as it can do no good, and may do great harm.

The hydrometer reading of fully charged battery jars is about 1.275, and the charge is completed when the charging current flows at a low rate, all jars are bubbling freely and evenly, and the hydrometer reading shows no further rise during one hour. The figures given in this paragraph, in regard to hydrometer reading of batteries, are average figures only. In some cases batteries are fully charged at reading below 1.275, and in some cases at readings above 1.275.

As before mentioned, the hydrometer is an instrument that is used to determine specific gravity, and the specific gravity of water is 1.000, and water freezes at 32 deg. Fahrenheit above zero. When the battery is fully charged, it will not freeze, but should be located in a cold place, and be

partly charged, the water in the solution will freeze and destroy the battery. The following is a summary of conditions of batteries, in relation to different freezing points:

Hydrometer Reading—1.160, battery 1 discharged, freezing temperature zero Fahrenheit.

Hydrometer Reading—1.210, battery 1 discharged, freezing temperature 20 deg. Fahrenheit below zero.

Hydrometer Reading—1.260, battery 1 discharged, freezing temperature 60 deg. Fahrenheit below zero.

Keep the following items in mind:

1—Inspect the battery frequently.

2—The solution in the jars should never get below the top of the plates.

3—Use only distilled water in refilling jars.

4—Always test the jars before refilling, and return the solution to the same jar from which it is drawn.

5—Keep the battery as near fully charged as possible. This can be determined by hydrometer reading.

6—Battery will not freeze in the winter if kept fully charged.

7—If in doubt about any point regarding the care of the battery, get in touch immediately with the plant service man, or with an experienced battery man.

Mr. H. E. More, of New Jersey, writes: "When the batteries are being charged, how can one tell from the appearance when they are fully charged?"

They gas or bubble freely and have a milky appearance. Unless the charging rate is excessively high, causing a very high temperature in the battery, it is safe to assume that when a cell bubbles, has a milky appearance, or gases freely, it is fully charged. After the batteries have cooled and settled they should be checked with the hydrometer for the specific gravity reading, if there is any doubt whether they are fully charged.

Farmer H. A. R. inquires: "What does the electrolyte consist of? I have all sorts of instructions on what to do and what not to do, but would like to know what is in the electrolyte."

The electrolyte, consisting of a mixture of pure sulphuric acid and distilled water, should indicate a specific gravity of 1.200 on the ordinary specific gravity hydrometer, or about 24 Baume scale. This solution should be mixed in stone jars in about the proportion of 41 parts water to one of concentrated sulphuric acid, by volume, pouring the acid into the water. River and well water usually contain impurities and should be avoided, as the least quantity of chlorine or ammoniacal salts present in the electrolyte will seriously affect the life of the plates.

Remember that boiled water is not distilled water. Distilled water really is the steam from boiled water, condensed.

R. E. D. writes: "I have a garage. What size air compressor can I use with a 1 1/2 K. W. farm lighting plant?"

The size compressor, which can be used to best advantage with a 1 1/2 K. W. plant has a bore from 2 1/2 to 3 inches and a stroke of from 3 to 4 inches. The speed of this compressor is about 200 to 300 R. P. M. and a power required is from 1 horse to 1 horse. It should operate to a counter shaft with a tight and loose pulley.

Farmer Edward Smith asks: "What does R. P. M. mean?"

P. M. means revolutions per minute.

In the hour of danger keep firm control of yourself, that you may devote all your energies to the problem of meeting the urgent need.

To Drive Rats and Flies Away—Scatter dry chloride of lime around and into rat holes. Most rodents and insects flee from it; rats will leave at once.

The National Organization of Farmers

By FRANK APP, New Jersey

(Concluded From Last Week).

WE NEED agricultural consultants abroad which should be government employees. The nation desires a guaranteed supply of food and this can only be obtained by having a surplus of food to sell. Some years the crop is short. A guaranteed supply means that the short year should be enough for normal consumption while the abundant years will need to have an additional market. This can be found in our foreign markets and should be cared for by agricultural consultants whose responsibility is to promote the marketing of agricultural products abroad.

Such legislation will be obtained only by the farmers formulating, planning and placing before Congress the reasons as well as the need for such action. They need to employ men who can present the facts for agriculture to the members of Congress. They must be skillful enough to meet the opposition of other interests in a friendly way. After all, it is a question of deciding to what extent the movement will influence the nation as a whole. As individuals, we are all inclined to be human and selfish, to see our own view point first. However, if we place the facts before the public showing that our desires and needs are also of benefit to the public, then we can usually get what is just.

The United States has a war debt of \$24,000,000,000. If this is paid for in proportion to the wealth of the different interests, it means that the farmer should pay \$8,000,000,000. Based on the amount per farm, it would mean an average of \$1300 war debt for every farm in the United States as their share of the debt. Different interests will attempt to shift as much of this debt upon others as possible. Business will need to adjust this in such a way that it will be fair to all concerned. If the farmer is not properly represented, if he does not have the facts and data necessary, he must expect to bear a heavy burden which, quite likely, will be more than his share.

Education

Agriculture is greatly in need of better educational facilities, for those actively engaged in agriculture itself, for their children, and for the public, which is interested in agriculture in so far as it furnishes a safe and efficient source of food.

The general impression of the public press and consumer prevails that the farmer has been obtaining a large profit particularly during the war. They recall vividly the high prices of foodstuffs and feel that this reflects directly upon the increased profits the farmer has been getting. Most of the consumers have practically no knowledge of the expenses entailed in producing food or distributing food while those that have at one time lived on the farm recall the days when the cost of production was far less than at present and feel that the farmer must be making a large amount of money as he thinks only of the cost of yesterday while he compares the price of today with that of yesterday.

I have before me an editorial which I have taken from one of the leading Philadelphia papers in which the writer comments upon the large income the farmers have been receiving by taking figures from the crop reporter which show that crops have paid in 1920 \$486.10 per acre and, in 1919 \$874.51 per acre; cranberries, \$213.37 in 1920; tobacco, \$168.05; potatoes, \$127.51; cotton, \$35.14 in 1920 and \$60.62 in 1919 while corn paid \$20.93 in 1920 and \$38.39 in 1919. The writer of the editorial used these figures to show what a large income the farmer can receive from a few acres of land which are cropped with cranberries or tobacco or potatoes. He doesn't consider the cost of these returns. It would be just as appropriate to draw the attention to the large income which our exporters have made in 1920 when they exported over eight billions of dollars from this country, or it would be just as logical to call attention to the large profits the railroads have made dur-

ing the past year when their income was over six billion dollars when in fact their return on investment for 1920 was but .78 per cent. It is not gross receipts which an industry receives, but it is the gross receipts less expenses which makes for profit. The public has been feeling that the farmers' gross receipts represented his income and approximately his net returns. As a matter of fact the cost of growing an acre of potatoes in New Jersey in 1920 was approximately \$200, corn \$65, tomatoes \$135 and wheat \$50. Consequently, the farmer in many cases furnishes labor and land gratis and his return in 1920 amounted to nothing more than the cost of seed and fertilizer and in other cases he just about broke even while a few have made some money.

If we look at agriculture as an industry and take the most prosperous year the farmers have ever had, namely, the year 1919 when the total valuation of crops and livestock according to the United States Department of Agriculture was 25 billions of dollars we find that this is obtained by valuing the crops and livestock separately. The crops were fed to the livestock so that two values were placed upon some of the crops. Should we value the crops which are not fed to livestock as one source of income and the livestock as another source of income we should have a return in 1919 of approximately eighteen billions of dollars gross receipts. This would need to be divided up among six and a half million farms of the nation which would be a little less than \$3000 per farm. From these gross receipts we must deduct the wages the farmer paid his hired men, the seed which he used for growing and producing his crops, the fertilizer he purchased from the fertilizer manufacturer, the cost of his horse labor in tilling the crops and caring for the stock, the use of his machinery, and the upkeep of his buildings, rental of his land or interest on his investment since the farmer frequently must borrow money, together with taxes and upkeep of the farm itself. After all these items are deducted would anyone feel that the American farmer in 1919, the most prosperous year which the nation ever had, received too large a return for his share of the prosperity of the nation? His average return was not above that of the ordinary laborer. It is true that a few of the farmers have made money. Any industry which does not offer opportunities for a few to make more than a bare living will not be prosperous, would not attract anyone with initiative or ambition, would not make for a happy people, and would not allow the proper education and development of our civilized life.

Country Educational Facilities

The facilities for education in the country are not comparable to those in the city since the facilities for education have not been developed so efficiently and do not offer the same opportunities for children to acquire an education in the country as they do in the city. This will also work to the detriment of the rural districts until the matter can be adjusted. Probably one reason why we have not had better schools is due to the fact that agriculture has not been sufficiently prosperous to allow the laying of taxes sufficient to meet the needs of education. The country does not possess hospitals and places of amusement or an opportunity for social activities as does the city. The amount of money spent for these things is comparatively small compared to life in the city. This is one reason why life in the country is less desirable in the eyes of man than life in the city. It is frequently said by people who would like to live in the country and who enjoy the occupation of farming, that they must move to town so as to educate their children, that the life of isolation for the farmer is not conducive to happy living. These things can only be corrected when agriculture becomes prosperous enough to afford the community and the home more of the conveniences and opportunities.

(Continued to Page 24).



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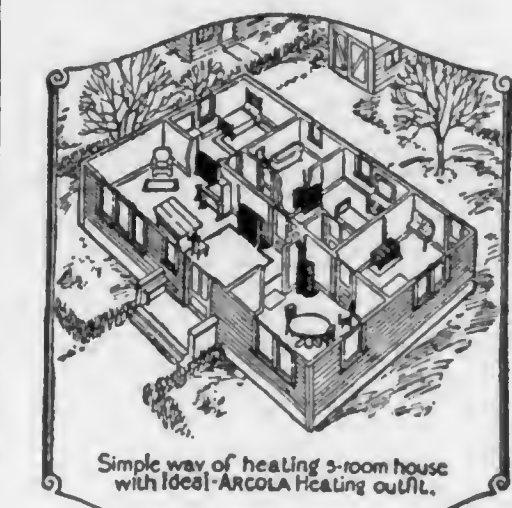
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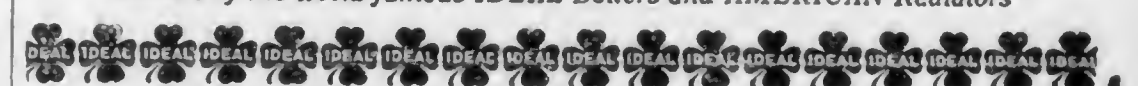


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15,000, 16,000, 17,000, 18,000, 19,000, 20,000,
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87,000, 88,000, 89,000, 90,000, 91,000, 92,000,
93,000, 94,000, 95,000, 96,000, 97,000, 98,000,
99,000, 100,000.

J. F. COUNCELL & SONS, FRANKLIN, VA.

HORTICULTURE

Some Effects of the Freeze

By J. P. STEWART

WE ARE NOW getting about far enough away from the big freezes of the latter part of March and early April to appraise their effects more accurately. At first it was supposed that practically all the varieties of fruit that were in blossom or nearly so at the time of the freezes were almost completely wiped out, while those that were not yet advanced to the pink stage, for example, had largely escaped. This separation left only the greater part of the apples and a few of the cherries, such as the Windsor and Montmorency, on the safer side.

This appraisal now seems to have been largely correct so far as the injured group was concerned, but the damage has reached over into the supposedly safer group much farther than was anticipated. This applies at least to the general region extending from the vicinity of Harrisburg, Pa., southward, and running indefinitely both eastward and westward of this point. This means that many of the varieties of apples, such as the York Imperial, which were not yet advanced to the pink stage even in the central blossom, at the time of the first and severest freeze, have proved to be injured much worse than expected, while some of the supposedly tenderer varieties, such as Stayman Winesap, Stark and Jonathan, which had reached the pink stage in many of their blossoms, apparently came thru the early freeze with less injury than at least some of us expected.

In the case of the Yorks and also of many other varieties, the freeze killed great numbers of the little flower stalks right at their bases, so that the entire blossom cluster is now drying up and dropping off without even attempting to bloom. Also many of the blossoms that went ahead and opened after the freeze are dead in the center so that nothing can be expected from them and even where the pistils are still good, very little if any of the pollen is still alive. There is also very extensive puckering and pocketing of the leaves and even killing of entire growing tips in many varieties that has doubtless been caused by the freezing as was noted in Western New York under similar conditions many years ago.

In our own orchard this year, the Starks, Jonathans, and Staymans, although considerably farther advanced than the Yorks and Ganos at the time of the first freeze, showed a much larger percentage of unopened blossoms than the latter after that freeze. The later freezes, however, practically wiped out the Staymans and also most of the others. In the Yorks, on the lower ground especially, it was often difficult to find a single live blossom bud even after the first freeze. In a large orchard over in our neighboring state on the east, however, we were agreeably surprised after the big freeze to find enough live buds to make a good crop under favorable conditions later, although the owner had given everything up, so far as this year's crop was concerned.

What the Fruit Growers Can Do
In the more northern territory—from Sunbury northward—so far as we have observed, the amount of damage from all the freezes, is apparently considerably less than in the area above mentioned, so the danger of a general shortage in the fruit crop with consequent exorbitant prices this year and with conditions reversed again next year for a repetition of the sad experiences of last fall, is less likely to occur than seemed probable at first. Even at the best, however, the financial loss to the fruit growers as a result of the abnormally early spring, with the subsequent natural frosts and freezes, has undoubtedly run into the mil-

lions of dollars, and this at a time when losses cannot be easily borne. With their fruit crops gone, various courses are open to the growers. One is to cut all operations to the minimum for this season and try to get over into another crop year with a minimum of expense. This is the course that is being followed in many cases, in one of which the working force on an eighty-acre tract of bearing orchard has been cut to one man and a team. This course, however, is only available to those who have been able to keep their orchards up to first-class condition. In the other cases, the absence of a crop offers an opportunity to get some of the unfinished matters brought up to standard, but whether the average grower will have sufficient foresight and grit to do this remains to be seen.

Other growers are turning into the vegetable field, in the hope that it is not already too crowded, and are planting chiefly potatoes, cabbage and tomatoes. In the latter crop, the production of green tomatoes which are wrapped and packed in carriers like Georgia peaches and sent South to ripen in transit has proved a rather profitable enterprise for some people in the past, and they are naturally going into it again on a big scale.

Unless the potato makes a big change in the market, however, the chances for even a reasonable profit in it are not very bright. With the remnants of last year's crop now selling at 35 cents a bushel to the farmer when the seed that produced it probably was worth around four dollars a bushel, it may be readily seen that some one has been losing money on his potatoes this year at least.

Handling the Brush after Pruning
In the absence of a crop of fruit, it is probable that many growers will take advantage of the opportunity to continue their pruning and renovation work farther in the growing season than usual. This always brings up the accompanying problem of what to do with the brush.

There are two general courses possible in solving the brush problem. One of these is to gather the brush by some of the various methods available and drag it out to some convenient spot to be burned, and the other is to take the fire to the brush by means of a brush burner. Of the two general methods, the latter is undoubtedly the most convenient and practical, if one has the necessary materials available to construct the burner.

To do this, a low, iron-wheeled truck is the best starting point, and on this a long iron bed of sheet iron is laid, with sides about two feet or thereabouts in height. This bed is frequently carried on three pieces of heavy gas pipe, of about the two-inch size, and this pipe is bent upward and attached to the fifth wheel in front in such a way that the outfit will turn short and still permit the general level of the bed to remain low. Old discarded automobile bodies will often furnish the sheet iron necessary for making the bed, which does not have to be such a fancy affair, but does need to be tight enough in the bottom to keep the coals from dropping out.

The fire is started in the center of the bed and the brush is added as the outfit is driven along the rows. After a good bed of coals is established, it will often hold under the ash covering for as long as a week, so that under ordinary circumstances no time need be lost in restarting the fire after any ordinary interruption in the work. Some care will of course be necessary to avoid making so large a fire or driving so close to the trees on the leeward side as to injure the trees, but the fact

that this type of outfit is in regular use in the citrus groves of the west and in big peach and apple plantings of some of our eastern states is sufficient evidence of its practicability.

If one prefers to gather his brush and haul it out to the fire, undoubtedly the most efficient method is with the aid of a big wooden-toothed rake of the hay-stacker type, which is drawn by two horses—one at each end of the rake. Such rakes are in considerable use in the large orchards of central and southern Jersey, and they have the special merit of requiring a minimum of hand labor in gathering the brush, which naturally makes them very rapid and relatively cheap in their operation.

The other common method of handling the brush is to attach a couple of logs to the front bolster of a wagon after properly wiring it down, then removing the hind axle and letting the logs drag. They are best fastened at the end with a crosspiece that will hold them about three feet apart, and a vertical rack of the desired height is set up along this crosspiece. One or two boards of lighter poles may be placed in between the two main poles, to enable it to hold the lighter brush better. This makes a very cheap and readily constructible outfit, but its operation is less economical than either of the others.

HINTS FOR FLY FIGHTERS

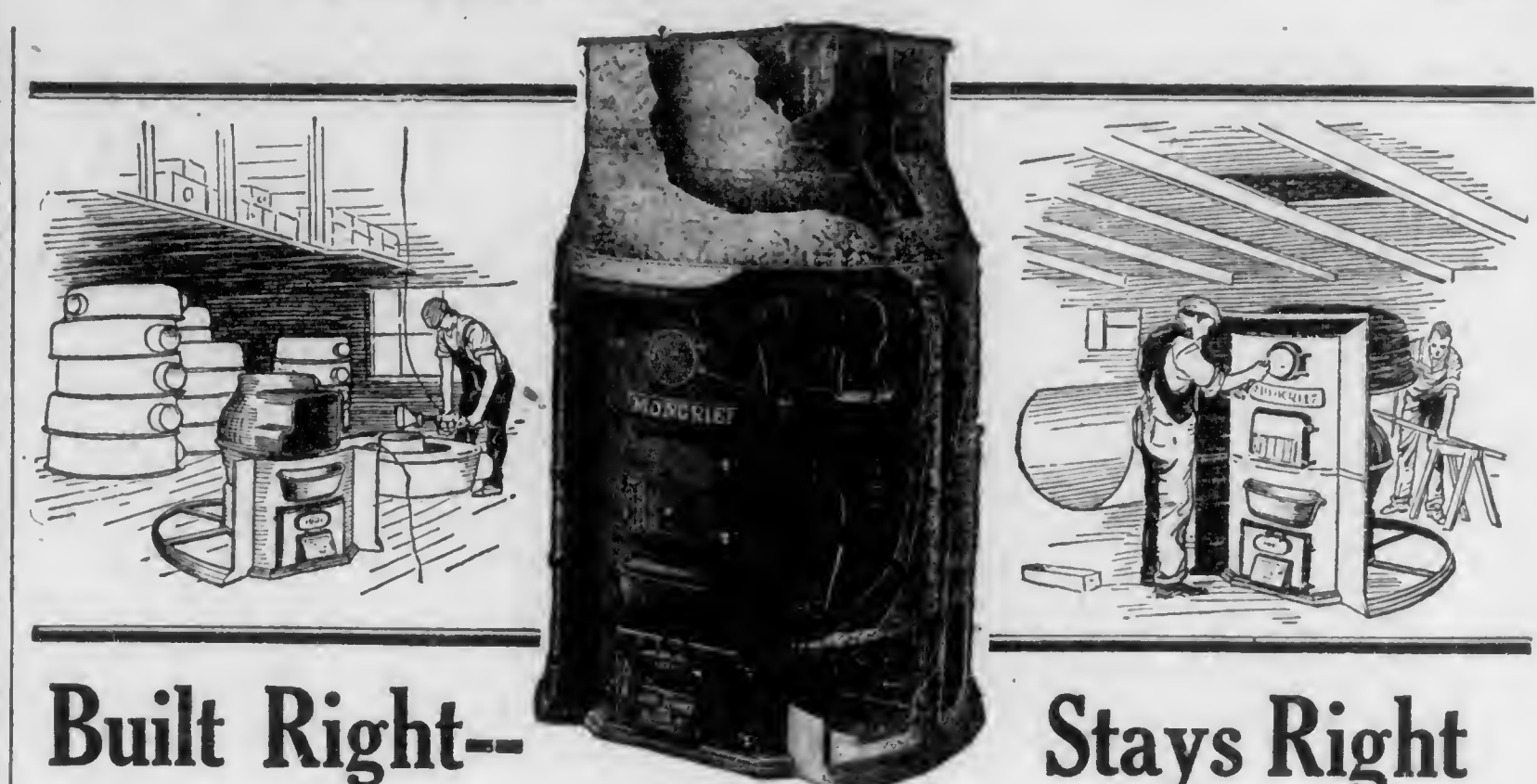
(Continued from Page 2).
left that flies delight in. Then screen all windows and doors into the cellar. Remove any decayed boards in the walks around the yard. Any damp spots in the yard fill with cinders, gravel or just clean dirt, if they cannot be easily drained. The next thing I mention I suppose no subscriber of the Pennsylvania Farmer will have, but I will mention it, as some neighbor may want to borrow your paper and they might have one. That thing is the slop hole right out by the kitchen door where all the slops, dishwater, etc., are thrown. How the flies do like that place, and for two reasons. First, it is very, very filthy. Second, it is right near the dining room table. Should any neighbor want to know of you how to get rid of that hole just tell him about the wonders of the septic tank. It is possible to get one installed.

Now with windows and doors screened, look for all the pails and utensils that have contained milk and fix them so no fly can get to them. Never leave a thing around that a fly can eat except poison. We will soon talk about the poison.

Being thru with the house and yard we will go to the other buildings. The hog pens must be removed far from the house and kept clean as possible. Chicken houses and stables must be made as clean as practicable and no piles of fertilizer left around them. Many places cannot be cleaned as thoroughly as they should to prevent fly breeding. Such places may be sprinkled with powdered borax and then with water. This is quite effective but must be repeated. In vaults use any kind of disinfecting material freely, such as copperas solution, chloride of lime, crude carbolic acid solution or even lye.

Keep fly poison where the flies can get to it at all times. Three teaspoonfuls of the concentrated solution of formaldehyde in one pint of water or three teaspoonfuls of the drug sodium salicylate (a fine white powder) in one pint of water make good poisons. Either of them flies like and they are better than preparations of arsenic to have around for they would be harmless should children get them. Put a little of the above preparations in saucers within reach of the flies. A mixture of equal parts by measure of cream, ground black pepper and brown sugar is poisonous to them. To clear them out of a house burn pyrethrum powder. It stupefies them so they may be swept up and burned. The odors of lavender, heliotrope, geranium and honeysuckle are claimed to be offensive to flies. It is said they will leave a room decorated in blue colors.

All of this is old advice but flies keep coming and so must the efforts to hold them in check continue. People may tell you of newer and better ways to oppose them. If so, use the newer way but until it is proved do not forget the old.—M. A.



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230,000, 240,000, 250,000, 260,000, 270,000,
280,000, 290,000, 300,000, 310,000, 320,000,
330,000, 340,000, 350,000, 360,000, 370,000,
380,000, 390,000, 400,000, 410,000, 420,000,
430,000, 440,000, 450,000, 460,000, 470,000,
480,000, 490,000, 500,000, 510,000, 520,000,
530,000, 540,000, 550,000, 560,000, 570,000,
580,000, 590,000, 600,000, 610,000, 620,000,
630,000, 640,000, 650,000, 660,000, 670,000,
680,000, 690,000, 700,000, 710,000, 720,000,
730,000, 740,000, 750,000, 760,000, 770,000,
780,000, 790,000, 800,000, 810,000, 820,000,
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580,000, \$295.00; 590,000, \$300.00; 600,000, \$305.00;
610,000, \$310.00; 620,000, \$315.00; 630,000, \$320.00;
640,000, \$325.00; 650,000, \$330.00; 660,000, \$335.00;
670,000, \$340.00; 680,000, \$345.00; 690,000, \$350.00;
700,000, \$355.00; 710,000, \$360.00; 720,000, \$365.00;
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1,180,000, \$595.00; 1,190,000, \$600.00; 1,200,000, \$605.00;
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A well-kept, bluegrass lawn is the best foundation for a front approach to a home. Having that and a few graceful shade trees so placed as to furnish protection and not to shut off the best views and spoil the beautiful stretches of green lawn, then we are ready to consider flowers or dwarf shrubs, the walks and driveway, to complete the home setting.

Frequently, bare and unsightly house foundations can be screened and improved wonderfully by setting clumps of dwarf shrubbery or groups of such flowers as the Cannas, or Salvia, quite near to the house and porch foundations.

Flowers for cutting are much more satisfactory when grown elsewhere than in the front yard, thus avoiding the ragged, unsightly effect that results when flowers must be closely cut for bouquets and decorations.

The writer has successfully grown Lobelia, Primrose, Heliotrope, Sultan, Geranium, Smilax Petunia, and other varieties of house plants from seed. Any kind of flower seed should be sown in a shallow box. Use loose, rich soil, containing one-third sand, make the surface perfectly smooth and level, sow seed and press gently down with a smooth board, so as to merely sink the seed into the soil; over the seed sift fine soil about 1-16th part of an inch in depth; again press gently down with a smooth board and the sowing is complete. Place the box in a pan of tepid water for a little while so as to let the water soak up from the bottom first time. Then put it in a light, sunny place, and keep a pane of glass over it to help retain the moisture and keep the temperature even. Leave a little space at one side of the box, not covered with glass, for ventilation. Keep moderately moist, but not wet, and the plants will appear in about ten days. As soon as they have four good leaves, transplant to small pots or shallow boxes.

The writer has used the same method for growing the following named outdoor plants. Larkspur, Canterbury Bells, Delphinium, Digitalis, Zinnia, Dusty Miller (a fine edging plant), Phlox, Candytuft, Alyssum, Balsams, Pinks and Pansies. It was found Pansies, Larkspur, and Delphiniums did better where the temperature remained from 65 to 75 degrees; the earlier in the season they are sown, the stronger the plants will be. Nearly all of them will do better when set out on the east side of a building, hedge, or row of tall growing plants where they are protected from the hot sun a portion of the day.—E. M. L. Blancher, New York.

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I once had a sweet little girl of ten years say to me: "Mother nags me all the time." My heart went out to the child, for being a rather frequent caller at this home, I knew what the child said was true. Nothing the child did ever seemed to be just what the mother liked. One morning after arising, washing her face and combing her hair, she ran across the street to where her playmate lived. When she returned in a few minutes, her mother saw that she failed to tie her hair back with

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Embroidered Skirt and Waist

The skirt is made of good quality white, collar and front trimmed with lace. A length sleeve. Color: White. Size: 32 to 46 bust. The waist and skirt must be ordered together. The skirt alone is worth the price we ask, so you are getting the waist absolutely free. Be sure to give size and color.

Delivery Free Just send your name and address and waist arrive, pay the postman \$2.49 for them. We have paid the delivery charges. If you don't find them all you expected, send them back and I will cheerfully refund your money at once. Could anything be fairer? Order by No. 60.

Walter Field Co., Dept. S-4059 Chicago

Genuine

BAYER

Aspirin

Always say "Bayer"

Unless you see the name "Bayer" on tablets, you are no getting genuine Aspirin prescribed by physicians for 21 years and proved safe by millions. Directions in Package.

Aspirin is the trade mark of Bayer Manufacturing of Monacocidesester of Salicylic acid.

Coleman Quick-Lite Lamp

More Light Than 20 Old Style Oil Lamps

This is the light for you—the Coleman Quick-Lite. Gives a brilliant, yellow light of 20 candle power, without glare or flicker. Easy on the eyes. No waste to trim. No chimney to wash. No dripping oil. No smoke or smell.

Makes and Burns Its Own Gas From Common Motor Gasoline

Can't melt, can't explode, even if tipped over. Cost to use only 10 to 12 cents a week. Glass, heavily pickled and polished. Inspected, tested and guaranteed. Will last a lifetime. Take this advertisement to your dealer. He will gladly get a Quick-Lite for you on approval. Free look on request. Write to Dept. C5.

THE COLEMAN LAMP COMPANY,
Wichita, Kan. St. Paul, Minn. Toledo, Ohio

Don't Forget

To Renew Your Subscription to Your Home Farm Paper

PENNSYLVANIA FARMER
261 South Third Street, Philadelphia, Pa.

a ribbon. For this childish negligence she was scolded, and that began a series of naggings that continued thru the day. At the breakfast table chiding the child became nervous and upset a glass of milk. The mother harped on this the rest of the meal, and thus made an unhappy meal of it and an unfortunate start for the child and the rest of the family for the whole day.

A mother who nags is making her problem of family government very much harder for herself. It may be that it is due to discomfort of ill health, but more often it is because she has never learned the first principles of child management. There is much more than providing food and raiment in being a good father and mother.—Mrs. R. S. B.

PENNSYLVANIA FARMER PATTERNS

Give figures and letters of each pattern exactly as printed at beginning of each description or we will not be responsible for correct fitting of orders. Give full measure when ordering. Patterns, waist measure for skirt, and are for children's patterns. Address Pennsylvania Farmer, 261 S. Third Street, Philadelphia, Pa.

3550.—Good School Dress.—The pattern is cut in 4 sizes: 6, 8, 10 and 12 years. A 10-year size will require 4½ yards of 27-inch material. Gingham in a check or plaid pattern, percale, seersucker, poplin and galatea are good for this model. Pattern, 10 cents.



3555.—Party Dress.—The pattern is cut in 4 sizes: 8, 10, 12 and 14 years. A 12-year size will require 4½ yards of 36-inch material. Batiste, voile, embroideries, net, silk, lawn, poplin, linen, crepe and crepe de chine could be used for this design. Pattern, 10 cents.

3533.—A Comfortable and Attractive Frock.—It is cut in 4 sizes: 6, 8, 10 and 12 years. A 10-year size will require 3½ yards of 27-inch material. Serge, gabardine, tricotine, velvet, gingham, and other wash fabrics are good for this style. Blue serge with a decoration of running stitches in black or red yarn will be smart. Pattern, 10 cents.



3504.—Charming Frock for Young Miss.—The pattern is cut in 3 sizes: 12, 14 and 16 years. A 14-year size will require 4½ yards of 36-inch material. Voile, batiste, organdy, chalice, poplin, taffeta or silk jersey, are good for this style. Pattern, 10 cents.

WEAVER PIANOS



"When you and I were young"

THE old songs have new thrills and new meanings when played on the Weaver. It lends to them its rare sweetness, purity, and power of tone—a tone that is beyond compare.

Nor are these qualities in the Weaver mere chance. They are inherent in every Weaver. They are the result of thought and painstaking care on the part of the Weaver craftsmen.

Fifty years of effort have given them a skill in pianoforte making of which they are jealously proud. And this pride goes into every Weaver. The result is a mechanical and artistic triumph.

There is a great satisfaction in owning an instrument which has the commendation and approval of some of the world's leading musicians. This the Weaver Piano has. It will have your commendation and approval, too, once you become the owner.

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Weaver, York and Livingston Pianos and Player Pianos



Look for this Bag

When you buy salt, get the best salt, the pure, flaky kind, without lumps or grit. Be sure this name is on the bag:



COLONIAL SPECIAL FARMER'S SALT

Better for every farm purpose: meat curing, butter making, cooking, baking.

Packed in 70 pound bags of strong material that make excellent toweling. If your dealer doesn't have it, send us his name.

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Divide the price of a De Laval by its years of service for its real cost.

THAT the best is the cheapest in the long run is doubly true of the De Laval Cream Separator.

Divide the price of a De Laval by the years of use you will receive—there are thousands in use from ten to twenty years, and even twenty to thirty years is not unusual—and you get a yearly cost that is much lower than that of any other separator you can buy.

During all these years of use the De Laval will skim with the utmost efficiency; it will save instead of waste cream; it will pay for itself over and over, and return you the greatest cash income.

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SEPARATOR

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How a monetary marvel, easily cleaned. Whether dairy is large or small, write for free catalog and monthly payment plan.

Western orders filled from Western points.

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GALL CURE
ON HORSES

For sore shoulders, sore necks, cuts, etc., rub into the skin about the sore. Use sparingly. Only what the skin absorbs does good. A smooth paddle makes application easy. Write for circular.

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ENSILAGE TRUCKS
WOOD TANKS

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10 S. 18th Street, (Room 104)
Factory, Norristown, Pa. PHILADELPHIA, PA.



Better Sires for Farm Herds

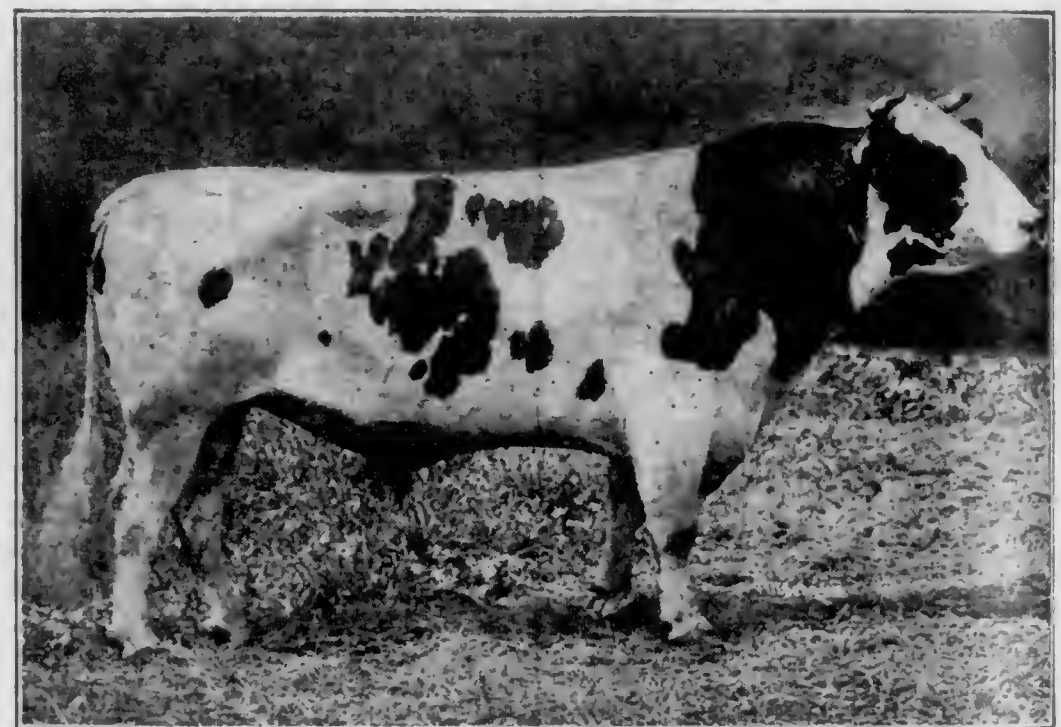
By W. H. TOMHAVE

THE Ontario Department of Agriculture has recently issued a bulletin that is to be used in the purebred sire campaign in Canada. It is full of useful information concerning the value of a good bull at the head of a herd of cattle, a good ram with a flock of sheep and the value of a good purebred boar in growing hogs. It gives a splendid description of a scrub bull, which is as follows:

"A scrub bull may be defined as a bull whose ancestors are unknown. He is an individual that has no place in particular to fill. His mission is to eat as much as possible without giving any returns, either in production of beef or milk. He is a source of annoyance to the neighbors, a bill of expense to the owner and the cause of a great yearly deficit in our livestock returns. Furthermore, he is a sure getter of inferior calves, thus keeping our average livestock shipments in the lower grades and giving our foreign competitors a

boar should be valued at not less than \$100. The same comparative value should be placed upon the ram that is used on the flock of breeding ewes.

There never was a more opportune time to secure a purebred sire to head the herd or flock than at present. The breeders of purebred livestock have a surplus of males of breeding age on hand that can be purchased at prices far below those prevailing during the past few years. This condition is due to the fact that a greater number of purebred animals are being produced and the temporary demand has slackened in keeping with all other commodities. At public sales, values have declined to about one-half of those prevailing during the past few years and have reached a level where farmers with a grade herd or flock can well afford to make a purchase to improve the animals produced on the farm. The initial cost of a purebred sire seems high to many farmers, and they con-



Spring Farm Pontiac 66664

great chance to capture and retain the foreign trade in the world's market.

"His offspring inherit all the poor qualities of their sire, and as they increase these poor qualities become more pronounced as time goes on; therefore we have a retrograde movement which gains in its magnitude year after year."

There are too many sires upon the farms of this country that come in this class and as long as such sires are kept, very little progress can be made in livestock improvement. The selection of the sire for breeding the females on the farm should receive more than passing consideration. It is thru the use of good sires that real progress can be made at a small initial expense to the farmer. There is an old saying which goes as follows:

"A bull is in money worth five times a cow; a boar for the breeding herd, three times a sow."

This general rule is as true today as it ever was and can often be used as a guide in buying a purebred sire. When a herd of grade cows are kept that are valued at from \$75 to \$100 the herd bull should be worth \$350 to \$500. When brood sows are valued at \$35 to \$40 per head, the herd

milk and 385 pounds of butterfat or 174 per cent more milk and 130 per cent more fat than their scrub grand dams or the original cow. Some of the cows of the first generation or the first cross by a purebred sire, showed an increase of 75 per cent in the amount of milk produced over the amount produced by their dams. This experiment and the observation of practical breeders shows that the production of a scrub or grade herd can be doubled in two generations by the use of a purebred sire from a dam of known production. When such is the case, is there any reasonable excuse for continuing with a grade dairy sire? Is not the grade sire expensive at any price? There is no greater expense in the feeding and care of a high grade or purebred herd than there is in the handling of a scrub herd. There are many similar illustrations with all other classes of livestock. The grade or scrub sire is a mill stone around the neck of progress in animal breeding and livestock improvement.

In a purebred sire campaign the following are some of the cardinal points to be kept in mind.

1—In a purebred sire campaign the pedigree scrub must not be overlooked. An inferior purebred sire is a detriment to any herd or flock. Breeders of purebred animals should use the knife on all inferior males and sell only such animals as they would care to use in building up a herd or flock.

2—Let all scrub sires be put on trial and condemned to the "shambles" as they are more valuable there than in the breeding herd.

3—The purebred sire is half the herd; the scrub is all the herd. Improved livestock can only be secured thru the use of better sires. The young animals on the farm reflect the character of the sire used on the place.

4—A good purebred sire is cheaper at any price than a scrub sire as a gift.

5—The boys and girls will take pride and greater interest in good livestock. Is there any livestock too good for the farm boy or girl? Association with good livestock will develop real men.

6—If you breed purebred livestock or keep purebred sires, let the public know what you are doing.

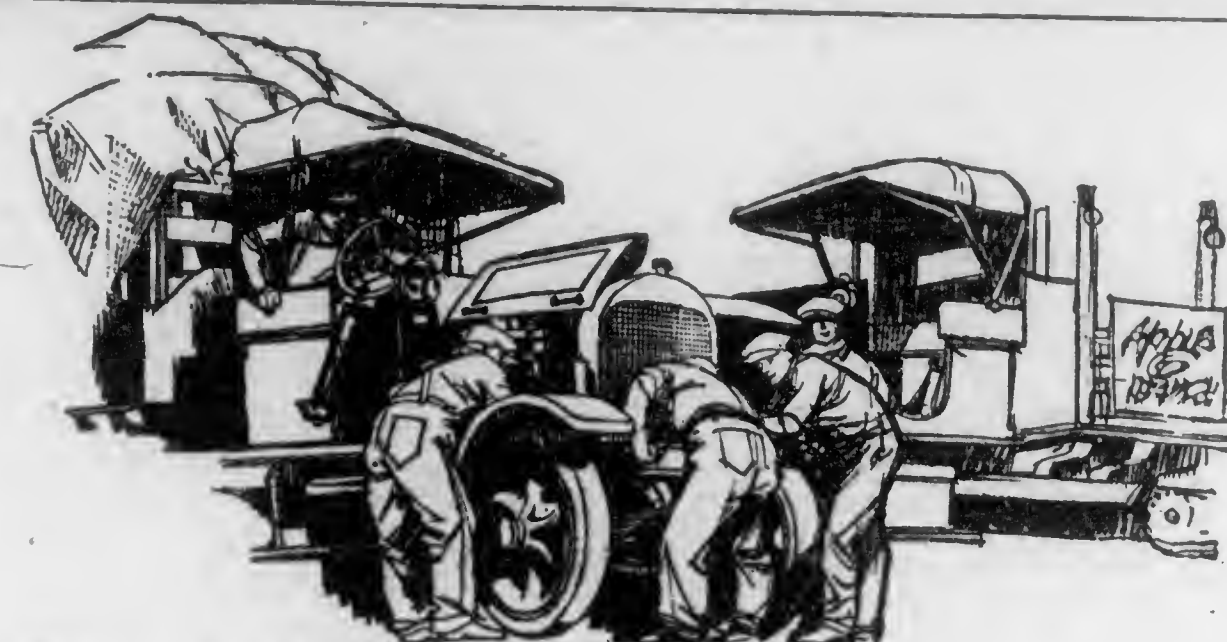
A cow tester has written a poem entitled "In Memoriam" in memory of the scrub cow which may be of interest to some of our readers, as it states the truth:

"Good-bye, Old Brindle, bony scrub,
The times demand a better breed.
You eat enough, but there's the rub.
You never pay for half your feed;
So after all these years we part,
But pray remember as you go
If this should break your bovine
heart,
You broke my purse long, long ago."

MILK FOR CALVES

Calves can be raised without milk. But when you see calves raised on milk and note their vigor and the remarkable development of their bodies, it is hard to overestimate milk as a food for calves. Sometimes it may pay to sell the milk and buy other feeds for the calf but if you wish to be sure and raise a healthy calf and want it to be vigorous and a good cow for the dairy, I believe no mistake is made in feeding that calf a lot of milk. It is nature's food for making a plump lively calf.—R. G. K.

Cheap by the ton, but worth its weight in gold—good old honest sunlight is invaluable in both poultry house and dairy barns.



Don't let inferior oil hold up your trucks

Profits today depend upon rigid economy

WHETHER you use a little one-tonner on pneumatics or a fleet of 5-ton giants, every truck must pay its way today. Layups for repairs wipe out months of profits.

Scientific checking shows that 90% of all truck engine troubles are due to faulty lubrication. Ordinary oil forms black sediment when subjected to the intense heat of the engine—200° to 1000° F. Cylinders are scored, bearings loosen, over-heating becomes common.

Keep expense like this off your books. Sediment is reduced 86% when you use Veedol, the lubri-

cant that resists heat. (See the two bottles at the left). With Veedol in the crankcase most serious troubles are prevented. Engines pull better, throttle down lower.

Have your men flush out their engines. Instruct them to fill up with Veedol. Leading dealers have Veedol in stock. Consult them for quotations.

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Use Veedol lubricants for all parts of the car: VEEDOL for the engine (light, medium, heavy, special heavy, extra heavy); for the differential and transmission VEEDOL TRANS-GEAR OIL or GEAR COMPOUND; for the tractor and truck WORM DRIVE OIL; GRAPHITE GREASE; CUP GREASE.



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Showing sediment formed after 500 miles of running

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Experienced feeders know that there is no better feed for growing hogs and poultry than buttermilk. A regular supply, however, has been difficult or impossible to obtain and feeders have had to do without it. A process has now been worked out for putting this valuable feed on the market in a condensed form, called SEMI-SOLID BUTTERMILK. By simply adding water you get real, genuine buttermilk with all its great feed value.



Semi-Solid Buttermilk, like fresh buttermilk, is an appetizer and tonic, as well as a feed, and keeps hogs in prime condition.

The hogs consume it eagerly and thrive on it. It is a wonderful tonic and conditioner as well as a most valuable feed. Readers of this paper interested in getting rapid growth and good, healthy stock should feed SEMI-SOLID BUTTERMILK. For further information about Semi-Solid Buttermilk and feeding hogs and poultry for greater profit, write to H. Nester & Co., Dept. 3612, No. 3 Chestnut St., Philadelphia, Pa., or Consolidated Products Co., Dept. 3612, Lincoln, Neb.

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Reid's MILK COOLER

Get one now. Save the usual sour milk losses. Drives out animal odors and grassy flavor. By far the most efficient and easily cleaned cooler made. Reasonably prompt shipment of orders.

Write for prices at once or ask your dealer.

A. H. REID CREAMERY AND DAIRY SUPPLY CO.
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Box H, Philadelphia, Pa.

CRUMB'S IMPROVED STANCHIONS

are guaranteed to please the purchaser. They are shipped subject to trial to the buyer's stable. They are right. Send for booklet.

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Will it stand? YES

Every Part built to weather the storms. Tight-fitting heavy staves, creosoted; heavy steel hoops with rolled threads; doors like safe. Beautiful red cedar roof.

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GREEN MOUNTAIN SILO

A Milker That Milks

without stripping after, without injuring your cows.

Investigate this milk!

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ABSORBINE
TRADE MARK REG. U.S. PAT. OFF.

Reduces Strained, Puffy Ankles, Lymphangitis, Poll Evil, Fistula, Boils, Swellings; Stops Lameness and allays pain. Heals Sores, Cuts, Bruises, Boot Chafes. It is a SAFE ANTISEPTIC AND GERMICIDE.

Does not blister or remove the hair and horse can be worked. Pleasant to use. \$2.50 a bottle, delivered. Describe your case for special instructions and Book 5 R. free.

ABSORBINE, JR., antiseptic liniment for medical use. Reduces Swelling, Relieves Pain, Swells Veins. Concentrated—only a few drops required as an application. Price \$1.25 per bottle at dealers or delivered.

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Dried Beet Pulp

- An Inexpensive Milk Producer -

Ask your Feed Dealer

THE LARROWE MILLING CO. DETROIT, MICH.

THE PHILADELPHIA RECORD'S \$1000 Puzzle Picture

Open to All Everybody Join In

"The Philadelphia Record" announces today a most interesting and amusing game. All can participate in this great fun game—from a school boy or girl to Dad, Mother, and even Grandpa and Grandma. It holds no preference to age. It is a test of your skill in ferreting out "S-words" in the Puzzle Picture. It's a jim-dandy puzzle game. We know you will enjoy it, for everyone loves a puzzle, and we venture to say you'll never have more fun.

Easy to Solve

Here's a Picture Puzzle which contains a number of objects and articles beginning with the letter "S." Fifteen Cash Prizes will be given for the best answers to this Puzzle. The answer having the nearest correct list of names will be awarded first prize; second nearest correct list, second prize, etc. See how many you can find.

Additional copies of Puzzle Picture free on request.

THE PHILADELPHIA RECORD \$1000. Puzzle Picture



How Many Objects Beginning With "S" Can You Find in This Picture? Costs Nothing to Try

It costs nothing to take part. The "S-Word" Puzzle Game is a campaign to increase the popularity of "The Record." It is not a subscription contest, and you do not have to send in a single subscription to win a prize. If your answer is awarded first prize by the judges, you will win \$30; but if you would like to win more than \$30, we are going to make the following special offer, whereby you can win bigger cash prizes.

YOU CAN WIN \$1000

Here's how: If the judges award your answer first prize, and you have sent in one yearly subscription to the Daily or Sunday "Record," you will receive \$350 instead of \$30; Second Prize, \$250; Third Prize, \$150.00. (See second column of figures in prize list.)

Or, if you are awarded First Prize and you have sent in two yearly subscriptions (either one new and one renewal, or two new subscriptions) to the Daily or Sunday "Record," you will receive \$1000 instead of \$30; Second Prize, \$750; Third Prize, \$500. (See third column of figures in prize list.)

It takes but two subscriptions to qualify for the big \$1000 reward. Absolutely two subscriptions is the maximum, one of which is to be a new subscriber. You can do this with little effort. Your own subscription will count as one and we can take subscriptions to start at any future date. In sending in your subscription give full instructions on a separate sheet from that on which you send your answer.

Address

RAY F. NEWELL
THE RECORD

Philadelphia Pennsylvania

Subscription Rates Payable in Advance

By Carrier or Agent	By Mail Outside of Philadelphia & Camden
Daily Only \$6.24	Daily Only \$6.00
Sunday Only \$2.00	Sunday Only \$1.80
Daily & Sunday.....\$11.44	Daily & Sunday.....\$12.00

OBSERVE THESE RULES

1. Any man, woman or child who is not in the employ of the Philadelphia Record, or a member of an employer's family, may submit an answer. It costs nothing to try.
2. All answers must be mailed by your Post Office closing time, May 21st, 1921, and addressed to Ray F. Newell, Puzzle Manager, The Philadelphia Record.
3. All lists of names should be written on one side of the paper only, and numbered numerically. Write your full name and address on each face in the upper right hand corner. If you desire to write anything else, use a separate sheet.
4. Only such words as appear in the English Dictionary will be counted. Do not use obsolete words. Where the plural is used, the singular cannot be counted and vice versa.
5. Words of the same spelling can be used only once, even though used to designate different objects or articles, or parts of objects or articles. An object or article can be named only once.
6. Do not use hyphenated or compound words, or any words formed by the combination of two or more complete English words, where each word in itself is an object.
7. The answer having the nearest correct list of names of visible objects and articles shown in the picture that begin with the letter "S" will be awarded First Prize, etc. Neatness, style or handwriting have no bearing upon deciding the winners.

THE PRIZES

Winning answers will receive cash prizes according to table below:

	If no subscription is sent	If one subscription is sent	If two subscriptions are sent
1st Prize.....	\$30.00	\$350.00	\$1000.00
2nd Prize.....	20.00	250.00	750.00
3rd Prize.....	15.00	150.00	500.00
4th Prize.....	10.00	100.00	300.00
5th Prize.....	7.50	50.00	150.00
6th Prize.....	5.00	40.00	100.00
7th Prize.....	3.00	30.00	80.00
8th Prize.....	3.00	20.00	60.00
9th Prize.....	3.00	15.00	40.00
10th to 15th....	2.00	10.00	20.00

*Note: In order to qualify your answer for the maximum awards, it will only be necessary to send in one renewal and one new subscription, or two new subscriptions, but two renewal subscriptions cannot be counted.

PASSING EVENTS IN PICTURES



- 1—Monsieur Viviani, former Premier of France, reviewing 27th Division Cavalrymen at Central Park, N. Y., recently.
- 2—Tilden, 2nd, right, world's singles tennis champion, defeating Washburn on the roof of the Wanamaker Store, 15 stories above the streets of Philadelphia.
- 3—President Harding opens telephone communication between U. S. and Cuba in the

- 4—Pan-American Union in Washington, while several prominent men heard the reply over individual phones.
- 5—President Harding reading his first message to Congress in the Capitol, April 12.
- 6—Princess Marie-Jose, eldest daughter of the King and Queen of Belgium.
- 7—King George and Queen Mary of England acknowledging the cheers of the specta-

- 8—tators at a football game.
- 9—Monsieur Viviani and Ambassador Jusserot leaving State War & Navy Building, after visiting Secretary of State Hughes.
- 10—This young coyote (prairie wolf) is mascot of a cavalry troop.
- 11—Famous American polo ponies recently shipped abroad for the International polo matches in England.

(Photo. Copyright by Underwood & Underwood.)



Dig your ditches with



NITROGLYCERIN DYNAMITE

EXCEPT for felling the trees and "planting" the sticks of dynamite, absolutely no hand labor was required to make this ditch just as it is shown. The blast blew out logs, stumps, stones, tangled roots and earth and the water scoured the trench.

Swamp land is usually good land. Get every acre into production and bringing in money. Du Pont Dynamite will dig ditches and remove stumps and boulders from your land quickly and cheaply.

Your dealer will supply you with Du Pont Explosives and Blasting Accessories.

Our Farmers' Handbook of Explosives tells you how to use dynamite for stump and boulder blasting, ditching, tree-planting and other farm work. Write for a copy TODAY. It's free.

E. I. du Pont de Nemours & Co., Inc.

Equitable Building May Building
New York, N. Y. Pittsburgh, Pa.

Pennsylvania Farmers

and all Farm Power Users like to work with Machinery that is dependable—with a Thresher and a Tractor that do their work efficiently.

A FRICK Thresher and Tractor

Outfit as here illustrated is guaranteed to do its work satisfactorily. Let us tell you more about it.

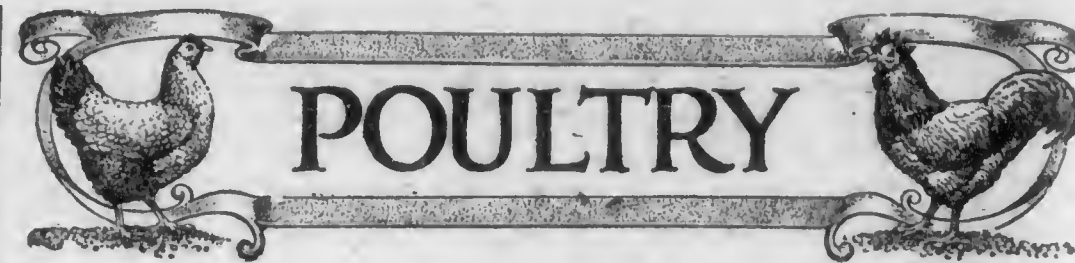
Write for big illustrated catalog which gives full details

FRICK COMPANY

347 W. MAIN STREET

WAYNESBORO, PA.

Please Mention Pennsylvania Farmer When Writing to Advertisers



Care of Brooder Chicks

By R. G. KIRBY

POULTRYMEN in our section generally admit that there is nothing like the old hen to properly bring a little brood of ten or twelve chicks. But economy must be considered in producing poultry. The cost per chick is not so important with a few broods but means a lot if from four hundred to several thousand are produced.

We find that the use of coal burning brooder stoves will cut down the cost per chick by reducing the amount of labor and equipment needed in bringing them up. A flock of 200 chicks may require around fifteen to twenty hen mothers. The same number of brood coops are needed. Each coop must have a dish of water and sour milk. Each coop requires more or less separate feeding and each must be closed at night. There is nothing more tiresome than having to close up a large number of brood coops after a hard day when all of the energy has been spent. It is so much easier to close and lock the doors of a few colony houses without bending over.

The hen brooded chicks are in more danger from lice and are more difficult to feed in bad weather than the chicks in a brooder house. Place 200 chicks under a coal burning brooder and here are the main items of work. Keep one water fountain and one sour milk fountain clean and filled. There will be no old hens to water and feed. Keep a hopper of dry mash in the brooder house and all the chicks have access to it.

It is easier to keep the brooder house clean than to clean many brood coops housing hens and chicks together. The ashes must be shaken down and coal added both morning and night. On several occasions we have started a fire in a colony brooder stove the day before the chicks were put under the hover and never had it go out until chicks were feathered out and the heat was no longer needed. When the fires have gone out it has happened in the day time on days so warm that they had been partially neglected. When a serious effort is made at night to keep up a good fire, we always find the stove burning in the morning. This is done by turning on the draughts enough in the evening to insure a brisk fire before the stove is adjusted and shut down for the night.

Chicks in a colony brooder house can obtain a certain amount of ranging and scratching even when the weather is bad and they cannot be free. Green sods can be supplied and sprouted oats and plenty of clover chaff or other scratching material in which they can work. The chicks under the hen are without exercise if the hen must hover them constantly during a storm period of several days. Those chicks are chilled if the hen does not hover them constantly. They are more difficult to feed than the chicks in the brooder house and this makes more work and worry for the poultryman when a lot of hen mothers are used for early hatching. Of course late in the season the weather may be very hot and then conditions are different. We find coal burning in brooders more difficult to manage in

hot weather and the hen brooded chicks cause less worry than they would in the early spring when weather conditions are bad. Before placing chicks under a hover start the fire and allow it to dry out the house. Furnish plenty of litter. A bright yellow straw litter hides the feet of the chicks and helps to prevent toe picking. Just the fact that they can satisfy their instinct to scratch helps to take their attention from their feet. If a few individuals show that cannibal tendency they can be isolated until they forget the habit. That will prevent it from spreading among a large flock. Pieces of meat hung on strings will help to prevent toe picking. It seldom causes much trouble among thrifty chicks on a balanced ration.

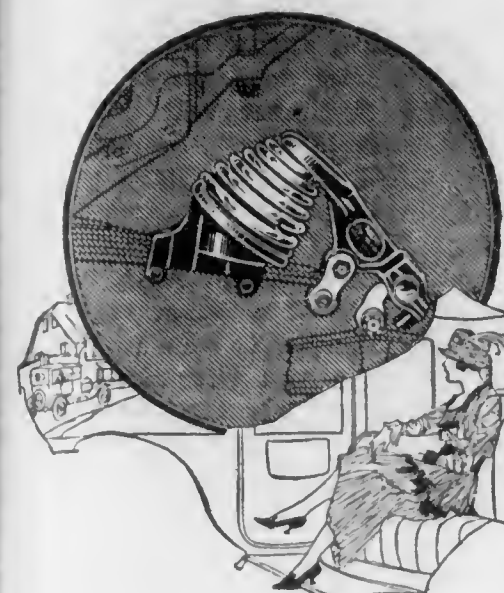
If there is about an inch of sand on the brooder house floor beneath the litter, that will supply plenty of grit. But it pays to keep some fine chick grit or coarse sand in a hopper to insure every chick obtaining it. Grit is the first feed for chicks. Next give them a chance at drinking sour milk or buttermilk. That seems to reduce the chances of bowel trouble. Do not use garden loam in the brooder house as the stove will dry it out and change it to dust. The young chicks will kick the air full of dust and make the atmosphere unhealthy. If sand cannot be obtained we would prefer to use only the straw or clover chaff litter on the colony house floor.

A hopper containing bran and one house clean than to clean many brood coops housing hens and chicks together. The chicks remain healthy. Sometimes chicks that are otherwise vigorous appearing, will paste up. Keep a medicine dropper and a bottle of castor oil handy. Give a few drops of castor oil to a chick that is beginning to paste up. It will often cause the condition to clear up. Use the castor oil before the chick becomes weak and devitalized and loses its appetite.

We have found that the commercial growing mashers are fine to develop meat, bone and feathers on young chicks. They may seem rather expensive but they do not have to be used very long and a 100 pounds of growing mash does seem to produce a lot of thrifty chick growth. For the first four or five days we give the chicks nothing as a scratch food but dry rolled oats. They like the oats and this feed is great for producing growth in all kinds of young animal and bird life.

After that we use commercial chick scratch feed and continue it until the chicks can eat cracked wheat and corn. But we have found by experience that chicks can be produced at less cost if they have a mash before them at all times. Then we do not need to feed so much hard grain and the chicks do seem to develop faster.

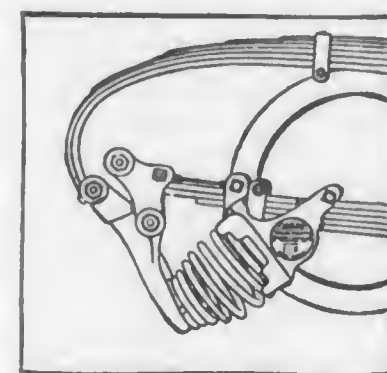
Sour milk is a great asset in making rapid growth. In some sections where the demand for milk is slack it may be possible to buy several cans may be very hot and then conditions are different. We find coal burning in brooders more difficult to manage in



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Shock Absorbers

Sanitation in the brooder house is important. The poultryman who keeps the litter clean and occasionally sprays the house with disinfectants finds his reward in a low mortality rate and a flock of chicks that grow sturdy and strong with an abundance of glossy plumage.

The length of time a brooder stove is needed depends on the season. But when the chicks are feathered out and seem to wish to roost at night, it pays to remove the stove and place low roosts in the house. Chicks that roost do not overcrowd every night and become overheated. They are easier to protect from mites and lice.

The small wooden brooders heated by oil lamps are often satisfactory to breeders with small flocks. Such brooders require a lot of attention. They must be very clean and never overcrowded. Their capacity for real service is sometimes overestimated. The chicks soon become large and sickness results from the quarters being too close. In very cold weather such brooders should be placed in a colony house even if they are supposed to be outside brooders. When placed outside during storms it may be necessary to cut down the ventilation too much in order to keep up the heat.

Even coal burning brooders can be overcrowded. Many of them will protect up to one thousand chicks. We have used such brooders with only 200 to 300 chicks per stove and find they are easier to manage. The conditions on the brooder floor will be better, the chicks will not overcrowd too much and the mortality rate will be less with the moderately sized flock.

With a stove brooder a thermometer is not needed, except possibly at first to make a study of temperatures. Keep a fairly warm fire burning and the chicks will select the point where the air is comfortably warm. We like to see them sleeping in a ring near the edge of the hover. Then they can move in toward the stove if it cools slightly before morning. Both chilling and overheating are bad for chicks. In a tight box brooder they cannot avoid the conditions. With a colony stove brooder it is only necessary for the chick to move. And nature tells chicks how much heat they need in order to live. It is a great factor in helping the poultryman to succeed with artificial brooding.

TRAPPING RATS

We have had the best luck catching rats in the steel spring traps. The traps must be placed near the rat holes or runways and covered carefully with a light layer of clover chaff or other deceptive material. Nearly all the rats we have caught have been held by only one leg showing that they travel fast and would not be apt to be caught in any device that they could see.

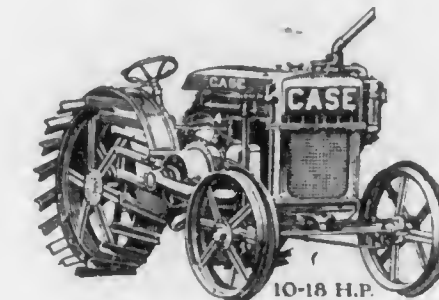
We have never caught a rat in a steel trap left exposed regardless of how tempting the bait might be. We have tried scattering cheese and meat over the concealed trap but have had the best luck by using a handful of wheat or corn.

The use of poison for rats is dangerous on a farm because it may be found by children, poultry or farm pets. The best insurance against rats is to use cement floors in buildings and clean up all the old scrap lumber piles and stone heaps where the pests can breed.—R. G. Kirby.

Self mastery is the essence of Heroism.

Suited to Many Orchard Jobs

ASIDE from the important job of orchard cultivation, Case 10-18 and 15-27 H. P. Kerosene Tractors demonstrate their great value to fruit growers in other ways. On the job of spraying, for instance, if you have a big orchard to cover and you are rushed for time, one of these tractors will pull a big-capacity power sprayer steadily, without stop, regardless of how hot the weather may be.



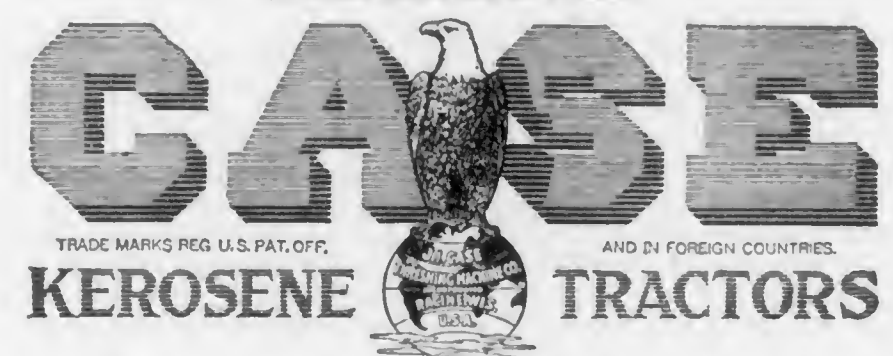
In some localities orchardists also find their Case Tractors a great help in clearing land and preparing the ground for young trees. For the jobs of uprooting stumps and big boulders, pulling up old hedges, etc., the sturdy construction and ample reserve power of Case Tractors make them especially valuable.

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The Valley of the Giants

By PETER B. KYNE

Chapter I

IN THE summer of 1850 a topsail schooner slipped into the cover under Trinidad Head and dropped anchor at the edge of the kelp-fields. Fifteen minutes later her small-boat deposited on the beach a man armed with long squirrel-rifle and an axe, and carrying food and clothing in a brown canvas pack. From the beach he watched the boat return and saw the schooner weigh anchor and stand out to sea before the northwest trades. When she had disappeared from his ken, he swung his pack to his broad and powerful back and strode resolutely into the timber at the mouth of a little river.

The man was John Cardigan; in that lonely, hostile land he was the first pioneer. This is the tale of Cardigan and Cardigan's son, for in his chosen land the pioneer leader in the gigantic task of hewing a path for civilization was to know the bliss of woman's love and of parenthood, and the sorrow that comes of the loss of a perfect mate; he was to know the tremendous joy of accomplishment and worldly success after infinite labor; and in the sunset of life he was to know the dull despair of failure and ruin. Because of these things there is a tale to be told, the tale of Cardigan's son, who, when his sire fell in the fray, took up the fight to save his heritage—a tale of life with its love and hate, its battle, victory, defeat, labor, joy and sorrow, a tale of that unconquerable spirit of youth which spurred Bryce Cardigan to lead a forlorn hope for the sake not of wealth but of an ideal. Hark, then, to this tale of Cardigan's redwoods:

Along the coast of California, thru the secret valleys and over the tumbled foothills of the Coast Range, extends a belt of timber of an average width of thirty miles. In approaching it from the Oregon line the first tree looms suddenly against the horizon—an outpost, as it were, of the host of giants whose column stretches south nearly four hundred miles to where the last of the rear-guard maintains eternal sentry-go on the crest of the mountains overlooking Monterey Bay. Far in the interior of the State, beyond the fertile San Joaquin Valley, the allies of this vast army hold a small sector on the west slope of the Sierras.

These are the redwood forests of California, the only trees of their kind in the world and indigenous only to these two areas within the State. The coast timber is known botanically as sequoia sempervirens, that in the interior as sequoia gigantea. As the name indicates, the latter is the larger species of the two, altho the fibre of the timber is coarser and the wood softer and consequently less valuable commercially than the sequoia sempervirens—which in Santa Cruz, San Mateo, Marin, and Sonoma counties has been almost wholly logged off, because of its accessibility. In northern Mendocino, Humboldt, and Del Norte counties, however, sixty years of logging seems scarcely to have left a scar upon this vast body of timber. Notwithstanding sixty years of attrition, there remain in this section of the redwood belt thousands upon thousands of trees of virgin

timber that had already attained a vigorous growth when Christ was crucified. In their vast, somber recesses, with the sunlight filtering thru their branches two hundred and fifty feet above, one hears no sound save the tremendous diapason of the silence of the ages; here, more forcibly than elsewhere in the universe, is one reminded of the littleness of man and the glory of his Creator.

In sizes ranging from five to twenty feet in diameter, the brown trunks rise perpendicularly to a height of from ninety to a hundred and fifty feet before putting forth a single limb, which frequently is more massive than the growth which men call a tree in the forests of Michigan. Scattered between the giants, like subjects around their king, one finds noble fir, spruce, or pine, with some Valparaiso live oak, black oak, pepper-wood, madrone, yew, and cedar.

In May and June, when the twisted and cowering madrone trees are putting forth their clusters of creamy buds, when the white blossoms of the dogwoods line the banks of little streams, when the azaleas and rhododendrons, lovely and delicate as orchids, blaze a bed of glory, and the modest little oxalis has thrust itself up thru the brown carpet of pine-needles and redwood-twigs, these wonderful forests cast upon one a potent spell. To have seen them once thus in gala dress is to yearn thereafter to see them again and still again and grieve always in the knowledge of their inevitable death at the hands of the woodsman.

John Cardigan settled in Humboldt County, where the sequoia sempervirens attains the pinnacle of its glory, and with the lust for conquest hot in his blood, he filed upon a quarter-section of the timber almost on the shore of Humboldt Bay—land upon which a city subsequently was to be built. With his double-bitted axe and crosscut saw John Cardigan brought the first of the redwood giants crashing to the earth above which it had towered for twenty centuries, and in the form of split posts, railroad ties, pickets, and shakes, the fallen giant was hauled to tidewater in ox-drawn wagons and shipped to San Francisco in the little two-masted coasting schooners of the period. Here, by the abominable magic of barter and trade, the dismembered tree was transmuted into dollars and cents and returned to Humboldt County to assist John Cardigan in his task of hewing an empire out of a wilderness.

At a period in the history of California when the treasures of the centuries were to be had for the asking or the taking, John Cardigan chose that which others elected to cast away. For him the fertile wheat and fruit-lands of California's smiling valleys, the dull placer gold in her foot-hill streams, and the free grass, knee deep, on her cattle and sheep-ranges held no lure; for he had been first among the Humboldt redwoods and had come under the spell of the vastness and antiquity, the majesty and promise of these epics of a planet. He was a big man with a great heart and the soul of a dreamer, and in such a land as this it was fitting he should take his stand.

In that wasteful day a timber-claim was not looked upon as valua-

ble. The price of a quarter-sector was a pittance in cash and a brief residence in a cabin constructed on the claim as evidence of good faith to a government none too exacting in the restrictions with which it hedged about its careless dissipation of the heritage of posterity. Hence, because redwood timber-claims were easy to acquire, many men acquired them; but when the lure of greener pastures gripped these men and the necessity for ready money oppressed, they were wont to sell their holdings for a few hundred dollars. Gradually it became the fashion in Humboldt to "unload" redwood timber-claims on thrifty, far-seeing, visionary John Cardigan who appeared to be always in the market for any claim worth while.

Cardigan was a shrewd judge of stumpage; with the calm certitude of a prophet he looked over township after township and cunningly checkerboarded it with his holdings. Notwithstanding the fact that hill-side timber is the best, John Cardigan in those days preferred to buy valley timber, for he was looking forward to the day when the timber on the watersheds should become available. He knew that when such timber should be cut it would have to be hauled out thru the valleys where his untouched holdings formed an impenetrable barrier to the exit! Before long the owners of timber on the watersheds would come to realize this and sell to John Cardigan at a reasonable price.

Time passed. John Cardigan no longer swung an axe or dragged a cross-cut thru a fallen redwood. He was an employer of labor now, well known in San Francisco as a manufacturer of split-redwood products, the purchasers sending their own schooners for the cargo. And presently John Cardigan mortgaged all of his timber holdings with a San Francisco bank, made a heap of his winnings, and like a true adventurer staked his all on a new venture—the first sawmill in Humboldt County.

The timbers for it were hewed out by hand; the boards and planking were whipsawed. It was a tiny mill, judged by present-day standards, for in a fourteen-hour working day John Cardigan and his men could not cut more than twenty thousand feet of lumber. Nevertheless, when Cardigan looked at his mill, his great heart would swell with pride. Built on tidewater and at the mouth of a large slough in the waters of which he stored the logs his woods-crew cut and peeled for the bull-whackers to haul with ox-teams down a mile-long skid-road, vessels could come to Cardigan's mill dock to load and lie safely in twenty feet of water at low tide. Also this dock was sufficiently far up the bay to be sheltered from the heavy seas that rolled in from Humboldt Bar, while the level land that stretched inland to the timber-line constituted the only logical townsite on the bay.

"Here," said John Cardigan to himself exultingly when a long-drawn wail told him his circular saw was biting into the first redwood log to be milled since the world began, "I shall build a city and call it Sequoia. By tomorrow I shall have cut sufficient timber to make a start. First I shall build for my employees better homes than the rude shacks and tent-houses they now occupy; then I shall build myself a fine residence with six rooms, and the room that faces on the bay shall be the parlor. When I can afford it, I shall build a larger mill, employ more men, and build more houses. I shall

encourage tradesmen to set up in business in Sequoia, and to my city I shall peremptory church and a school-house. We shall have a volunteer fire department, and if God is good, I shall, at a later date, get out some long-length fir-timber and build a schooner to freight my lumber to market. And she shall have three masts instead of two, and carry half a million feet of lumber instead of two hundred thousand. First, however, I must build a steam tugboat to tow my schooner in and out over Humboldt Bar. And after that—ah, well! That is sufficient for the present."

Chapter II

Thus did John Cardigan dream, and as he dreamed he worked. The city of Sequoia was born with the Argonaut's six-room mansion of rough redwood boards and a dozen three-room cabins with lean-to kitchens; and the tradespeople came when John Cardigan, with something of the largeness of his own redwood trees, gave them ground and lumber in order to encourage the building of their enterprises. Also the dream of the schoolhouse and the church came true, as did the steam tugboat and the schooner with three masts. The mill was enlarged until it could cut forty thousand feet on a twelve-hour shift, and a planer and machines for making rustic siding and tongued-and-grooved flooring and ceiling were installed. More ox-teams appeared upon the skid-road, which was longer now; the cry of "Timber-r-r-r!" and the thunderous roar of a falling redwood grew fainter and fainter as the forest receded from the bay shore, and at last the whine of the saws silenced these sounds forever in Sequoia.

At forty John Cardigan was younger than most men at thirty, albeit he worked fourteen hours a day, slept eight, and consumed the remaining two at his meals. But thru all those fruitful years of toil he had still found time to dream, and the spell of the redwoods had lost none of its potency. He was still checker-boarding the forested townships with his adverse holdings—the key-positions to the timber in back of beyond which some day should come to his hand. Also he had competition now; other sawmills dotted the bay shore; other three-masted schooners carried Humboldt redwood to the world beyond the bar, over which they were escorted by other and more powerful steam-tugs. This competition John Cardigan welcomed and enjoyed, however, for he had been first in Humboldt, and the townsites and a mile of tidelands fronting on deep water were his; hence each incoming adventurer merely helped his dream of a city to come true.

At forty-two Cardigan was the first mayor of Sequoia. At forty-four he was standing on his dock one day, watching his tug kick into her berth the first square-rigged ship that had ever come to Humboldt Bay to load a cargo of clear redwood for foreign delivery. She was a big Bath-built clipper, and her master a lusty down-Easter, a widower with one daughter who had come with him around the Horn. John Cardigan saw this girl come up on the quarter-deck and stand by with a heaving-line in her hand; calmly she fixed her glance upon him, and as the ship was shunted in closer to the dock, she made the east to Cardigan. He caught the light heaving-line, hauled in the heavy Manila stern-line to which it was at-

tached, and slipped the loop of the mooring-cable over the dolphin at the end of the dock.

"Some men wanted aft here to take up the slack of the stern-line on the windlass, sir," he shouted to the skipper, who was walking around on top of the house. "That girl can't haul her in alone."

"Can't! I'm short-handed," the skipper replied. "Jump aboard and help her."

Cardigan made a long leap from the dock to the ship's rail, balanced there lightly a moment, and sprang to the deck. He passed the bight of the stern-line in a triple loop around the drum of the windlass, and without awaiting his instructions, the girl grasped the slack of the line and prepared to walk away with it as the rope paid in on the windlass. Cardigan inserted a belaying-pin in the windlass, paused and looked at the girl. "Raise a chantey," he suggested. Instantly she lifted a sweet contralto in that rollicking old ballad of the sea—"Blow the Men Down."

For tinkers and tailors and lawyers and all. Way! Aye! Blow the men down! They ship for real sailors aboard the Black Ball. Give me some time to blow the men down.

Round the windlass Cardigan walked, steadily and easily, and the girl's eyes widened in wonder as he did the work of three powerful men. When the ship had been warped in and the slack of the line made fast on the bitts, she said:

"Please run for'd and help my father with the bowlines. You're worth three foremast hands. Indeed, I didn't expect to see a sailor on this dock."

"I had to come around the Horn to get here, Miss," he explained, "and when a man hasn't money to pay for his passage, he needs must work it."

"I'm the second mate," she explained. "We had a succession of gales from the Falklands to the Evangelistas, and there the mate got her in irons and she took three big ones over the taffrail and cost us eight men. Working short-handed, we couldn't get any canvas on her to speak of—long voyage, you know, and the rest of the crew got scurvy."

"You're a brave girl," he told her.

"And you're a first-class A. B.," she replied. "If you're looking for a berth, my father will be glad to ship you."

"Sorry, but I can't go," he called as he turned toward the companion ladder. "I'm Cardigan, and I own this sawmill and must stay here and look after it."

There was a light, exultant feeling in his middle-aged heart as he scampered along the deck. The girl had wonderful dark auburn hair and brown eyes, with a milk-white skin that sun and wind had sought in vain to blemish. And for all her girlhood she was a woman—bred from a race (his own people) to whom danger and despair merely furnished a tonic for their courage. What a mate for a man! And she had looked at him pridefully.

(Continued Next Week)

Our deeds shall travel with us from afar, And what we have been makes us what we are.—Geo. Elliot.

Sorrow follows wrong, as echo follows song.

A Story for Children

The Little Runaway

"NETTIE!" called Mother sharply as she heard Rover, the collie dog, yelp once again. "If you cease Rover any more I shall have to punish you. Why must you pick on your doggie just because I won't let you go on that long, hard hike."

"I don't care! I will if I want to," sauced Nettie.

Mother came to the door just in time to see Nettie pull Rover's tail, and then run around the corner.

"Nettie! Come right in here and sit on this stool until you can behave yourself!"

A sulky little curly-headed girl walked into the house and threw herself on the stool. She sat there in bitter silence thinking how badly she was treated.

After an hour had passed Mother came to Nettie and smilingly said: "Nettie, dear, aren't you sorry now? Kiss Mother and then you may get down."

Nettie climbed from her stool and walked away without a word. Mother let her go being too wise to say anything more. Soon she saw her little daughter stealing around the house with a bundle under her arm, and she let her go.

When Father came home, it was getting dark and still Nettie had not returned.

"I am a little worried. Don't you think you had better go for her, Father?"

"No, no," he answered. "Let her learn a lesson. I have an idea. Let's send Rover. I'll wager she'll be glad to see him."

Meanwhile Nettie was walking along a dusty road, tired and hungry. She was beginning to vision her Mother getting supper, and she began to wonder where she could find something to eat. It was the first time that that had occurred to her.

"Hoo! hoo! ho-o-o!" came from out of the dusk.

Nettie jumped to the side of the road and crouched underneath some elderberry bushes. She was too frightened to move again. Large tears began to trickle down her cheeks, and from every nook and corner new sounds seemed to come. She could see slight forms moving about among the trees. Something came up to her side and she froze stiff with terror. A cold nose was thrust into her face and a familiar form loomed up before her.

"Oh-oh, Rover," she breathed, "I'm so glad to see you. Dear old doggie. I love you so much."

An hour later a tired, dusty and much ashamed little girl walked into her home followed by her faithful dog.

Mother looked at Father and put her finger to her lips, and then said sweetly:

"Did you have a nice walk? I guess you're hungry aren't you. Well Mother has your supper all hot for you dear."

As she was eating, Nettie suddenly choked and then started to sob. Putting her arms around her mother's neck, she said: "I'm—I'm sorry. Mother."—L. M. K.



Keep Them in Handy Places

YOU'LL find it mighty convenient to keep several pairs of Boss Work Gloves where you use them most often.

Hang a pair up in the barn to slip on when you clean out the stalls. Have a pair in the shed to wear while splitting or sawing wood. Keep a pair in the machine shop for all repair work. Put a pair in the tool box of your car to wear while changing tires and tinkering round the engine.

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THE BOSS JERZY—highest quality cotton jersey cloth in many colors.
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NEED OF MORE RURAL NEWS

The agricultural officials of the Cortland County, N. Y., Home Bureau and representatives of newspapers of Cortland County, held a conference at Cortland recently and discussed problems concerning rural news gathering and publication.

The two speakers for the day were Mrs. M. G. Feint of Cortland County, who is a reporter for the Pennsylvania Farmer, and other agricultural papers, and Prof. M. V. Atwood, of the State College of Agriculture, a county newspaper publisher as well as an editor and instructor in the extension service at Cornell University.

Among other interesting things Mrs. Feint said: "one-half the people of this country today are of the rural population and they feed the other half. The consumer should always feel a source of interest in those who supply his food. The biggest handicap today in the problem, is the lack of understanding on the part of the consumer. The man who eats the food should know about his fellow associate who tills the soil, and vice versa.

"The newspaper must consider that the readers of the average community papers are 70 per cent rural. That is a good proportion and their wants are worth considering. The interest of the people is broadened by good rural news, and today they want more than the personal column."

It is a very short sighted policy, Mrs. Feint said, that will allow any farmer to skimp himself on reading matter adapted to his work, especially the local papers of his county. These, with a good variety of farm papers, are as necessary to the carrying on of profitable farm work as are the farm tools and machinery he invests in, it is believed by most successful farmers.

Mrs. Feint pointed out that "many valuable things right here in this county never get into the papers because the reporters do not see the news value in them, even though they are frequently of state or national value. Sometimes the information is too incomplete. The reporters need to be taught what is news and what is real rural news."

—E. M. L. B.

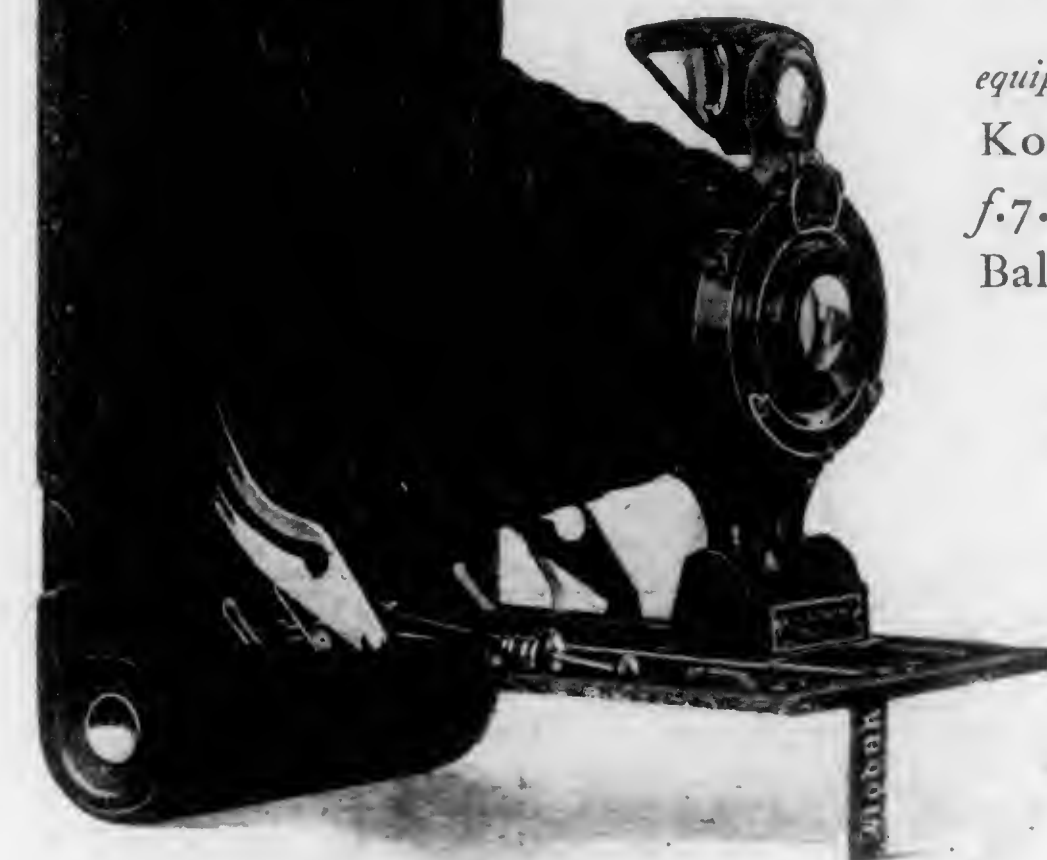
FARM ORGANIZATIONS

(Continued From Page 7.)

ties demanded by modern social needs which are more nearly comparable to those of the towns. During the past generations, the city has drawn on and profited at the expense of the country. As a nation we must now decide whether we will become an industry people or whether we will remain a well-balanced nation by producing sufficient food for the consumption of the cities, so we will not need to support a large navy and army for the protection of a source of food supply from some other country. When war was declared in 1914, it was said that England had enough food to last her but a few days. It was only due to her large navy that the nation was not starved outright. Again, it is a question whether our food-stuffs will not cost us considerably more if we have to depend upon a foreign supply during the next generation. This problem is a national problem. It is not one for the interests of agriculture alone, but it is of equal importance to the industrial, trading and manufacturing centers of the nation.

Art little? Do thy little well,
And for thy comfort know;
Great men can do their greatest work
No better than just so.—Goethe.

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AGRICULTURE
THE KEYSTONE OF
NATIONAL PROSPERITY

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Fertilizers and Seed Germination

An Excess of Soluble Salts May Retard or Prevent Sprouting of the Seed

Dr. J. G. LIPMAN
Director New Jersey Experiment Station

THE SIZE of the crop is the net result of many factors and conditions. Favorable conditions will tend to increase the yield, unfavorable conditions will tend to decrease it. But unfortunately for us we cannot always control the unfavorable factors even tho we may learn to recognize them. We know, for example, that too much water in the soil is almost, if not quite, as bad as too little, and that it is not always possible or profitable to supply the deficiency by irrigation, or remove the excess by drainage. In the same way we know that crops are helped by commercial fertilizer and injured by it when improperly used.

There are many practical questions that pertain to the use and abuse of commercial fertilizers. Not the least important among these relates to the action of the soluble salts in fertilizers on the germination of the seed and the early growth of the plants. Generally speaking, small quantities of soluble salts will hasten germination. This may account for the ancient practice among gardeners of soaking beet seed as well as other seed in very weak solutions of salt-peter or in diluted liquid manure. It will also account for the discussion carried on within recent years in some of the French and Italian journals relative to the advantages of soaking seeds previous to their planting in solutions of certain salts. On the other hand, strong salt solutions will retard or entirely prevent the germination of seeds. In view of the fact that chemical fertilizers are largely dissolved in the soil moisture, and the strength of the solution will differ with the method of applying the fertilizer and the texture of the soil, and that the crop itself is a factor of no small importance, it becomes evident that a careful study of the problem just outlined would be decidedly worth while.

Recent experiments carried out at the New Jersey Experiment Station throw some interesting light on this subject. Seed of corn, wheat, rape, field peas, soy beans, lupine, water-melon, buckwheat and alfalfa was soaked for varying lengths of time in pure water and in solutions of muriate (chloride) of potash, 144 per cent. An examination of the figures just given shows that the amount of water absorbed varies not only with the size of the seed but also with the nature of the crop from which the seed was derived. Thus we note that the seeds of legumes absorbed more moisture than the seeds of nonlegumes. When the seed was soaked in solutions of different strength it was found that

was poured off, the seeds were dried between sheets of blotting paper and the weights determined. It was found that in the case of pure water the different seeds absorbed, in round figures, the following percentages of moisture: wheat, 43 per cent; corn, 30 per cent; water-melons, 80 per cent; buckwheat, 48 per cent; field

equivalent concentrations of different salts produced like results. In other words, the amount rather than the kind of salt in solution determined the effect on the germination of the seed. It was also found that as the strength of the solution increased there was more and more interference with the absorption of moisture by the seed. This is explained by the fact that the presence of any considerable quantity of dissolved salts retards the absorption of moisture by the seed. The latter does not swell so fast and the period of germination is lengthened. When the amount of salt present in solution is increased beyond a certain point the interference with water absorption by the seed becomes great enough to prevent germination entirely. This reminds us, in a way, of the condition that arises when fresh fruits or vegetables are placed in a strong solution of salt or sugar. The brine or syrup cause the fresh fruit to shrivel up simply because they can not only prevent the absorption of water by the latter, but actually draw it out of the fresh vegetable tissue.

The practical application of the facts noted above is obvious. When commercial fertilizer is broadcasted and evenly mixed with the entire mass of surface soil the influence on the soil solution is seldom great enough to cause interference with seed germination. It is only in the case of large applications of fertilizer, and even then in the lighter soils only, that more or less remote danger of injury may arise. The situation is quite different, however, when the fertilizer is drilled with the seed, or applied in the hill or row. Under such conditions we create an opportunity for the formation of a very strong solution of salts in contact with the seed. When the concentration of the dissolved salts reaches one-fifth of one per cent, or 1 pound in 60 gallons of water, danger of injury to the plant arises. It is estimated that 500 pounds of soluble fertilizer uniformly mixed in the upper three inches of very light sandy land will increase the concentration of the soil solution by one-tenth of one per cent. An application of 1000 pounds will increase it by 2 of one per cent, and at 2000 pounds, by 4 of one per cent. In a clay loam soil the corresponding increases in concentration would be from 1-10 to 4-10 of one per cent. When the fertilizer is applied in drill or row the concentration may become ten or even twenty times as great. The reader can therefore draw his own conclusions as to the extent to which the crop may be handicapped in its early stages.



Seedtime and Harvest Shall Not Fail

144 per cent; lupine, 140 per cent; soy beans, 119 per cent; rape, 57 per cent, and alfalfa 144 per cent. An examination of the figures just given shows that the amount of water absorbed varies not only with the size of the seed but also with the nature of the crop from which the seed was derived. Thus we note that the seeds of legumes absorbed more moisture than the seeds of nonlegumes. When the seed was soaked in solutions of different strength it was found that

of growth by the proximity to the seed and young plants of a strong solution of salts. Were it not for the fact that as the plants grow older they are stimulated by the presence of the fertilizer and the early handicap is partly or wholly overcome, the final showing in favor of the fertilizer would not be as good.

The question now arises whether by adopting suitable methods the farmers could not eliminate all the early handicaps and retain all the later benefits. It is generally recognized that while the broadcasting of the fertilizer lessens the danger of injuring the crop early in the season, the final yields are likely to be better when the fertilizer is used in the drill or row. Nevertheless, other methods of applying and distributing fertilizer are not receiving the consideration that they deserve. For instance, sweet potato growers in southern New Jersey, Delaware and Maryland were in the habit, before the war, of using large amounts of Kainit, often as much as one ton per acre. This was usually applied in the preceding fall or very early in the spring. If applied within six weeks or less of planting time it often produced unfavorable results. In the case of cyanamid or lime nitrogen it was found

that it is not safe to sow the seed or to set out the young plants for ten days or two weeks after the fertilizer has been applied. Evidently these fertilizers have to undergo certain changes in the soil or to become widely distributed before the danger of injuring the crop has disappeared. Another method that has been suggested and one which our implement makers will have to study more seriously is that of the application of fertilizers at some distance from the seed; or the mixing of it with a larger volume of soil. Some fertilizer distributors are constructed on this principle. There is room for further improvement in this connection both as to the construction of the machinery and of its use. Finally there is something to be said on the score of applying only part of the fertilizer at planting time, and part of it later; or of applying part of the fertilizer in the row and part of it broadcast. Something on the subject has already been said in these columns at the request of readers of the Pennsylvania Farmer. The matter is deserving of further comment if for no other reason than that of the wider use of commercial fertilizer and its application in constantly increasing amounts per acre as the more intensive

methods of fertilization and cropping are adopted. The importance of the matter will be emphasized more and more as the use of high analysis fertilizers becomes more common, and as the newer and more concentrated chemicals become commercialized to a greater extent. Quite naturally the soil investigators will be asked to produce a lot of new information for the guidance of the farmer. If the fertilizer applications are to be divided, what would be the best amount to use at planting time? Should the side dressing be of the same composition as that used at planting time? To what extent would the texture of the soil and the nature of the crop modify the practice? Indeed, these and other questions are even now undergoing a careful study at some of our experiment stations. Ultimately many practical recommendations will result from these studies. Meanwhile the producers themselves are in a position to make a substantial contribution to our knowledge on the subject by determining under their particular conditions the value of the different methods of applying and distributing commercial fertilizer.

Farmers Adopt Grain Selling Plan

Convention Delegates Unanimously Ratify Plan Proposed by Committee of Seventeen



J. R. HOWARD
Pres. American Farm
Bureau Federation

THE marketing plan proposed by the Farmers' Grain Marketing Committee of Seventeen was unanimously accepted at a big ratification meeting in Chicago, April 6-7-8. One hundred and three selected delegates from the twenty-five surplus grain producing states voted "aye" unanimously at the end of a two-days stormy discussion.

Should grain growers who contract to sell their surplus grain under the plan devised by the Farmers' Marketing Committee of Seventeen be required to pool at least one-third of their grain? This question proved to be the rock which for a day and a half threatened to split the conference.

The final plan submitted by the Committee of Seventeen gives to the farmers composing the local grain growers' association absolute option as to whether their grain shall be pooled or sold outright on consignment thru the National Selling Organization known as the United States Grain Growers, Inc. It developed, however, that there had not been absolute unanimity among the members of the Committee and six of them were ready to defend the compulsory pooling of the grain.

The issue was raised shortly after the plan drafted by the Committee was read to the delegates when C. O. Moser from Texas offered an amendment which provided for compulsory pooling of one-third of all the grain marketed by individuals thru the National Sales Agency. J. R. Howard, President of the American Farm Bureau Federation who presided over the meeting gave both sides equal opportunity to present their arguments on the floor.

The amendment was seconded by Aaron Sapiro, representing the Pacific Northwest Wheat Growers, who made a vigorous argument in its behalf. Only by pooling at least one-third so that the grain could be fed upon the market as it is able to absorb it will it be possible to introduce the plan of merchandising grain. Without it there will be a continuation of the practice of dumping grain which farmers now follow. Mr. Sapiro believed that the plan provided too many options, and that by giving the farmer the opportunity to sell all of his grain immediately, the pooling plan would not be given a real chance. Most growers are familiar with the plan of outright sale or sale on consignment while few of them are familiar with the pooling plan. Without the compulsory feature the number who would volunteer to pool their grain might not be sufficient to stabilize the market and therefore the pooling principle would not be given the acid test

of the survival of the fittest as claimed by the Committee. Mr. Sapiro's contact with co-operative marketing organizations in California has led him to believe that the pooling feature was the life of the proposed plan.

Delegates who opposed the amendment maintained that farmers would be unwilling to sign up for the sale of their grain under the plan of pooling even one-third on a five-year basis. Almost invariably, however, delegates prefaced this argument by the statement that they personally were entirely ready to contract for the pooling of their own surplus grain. The possibility of alienating public opinion by inaugurating a plan which at the start might be construed as a national monopoly was also brought out while some of the legal minded delegates and certain members of the Committee of Seventeen considered it unwise to incorporate the compulsory pooling clause lest such a plan be declared illegal thus imperiling the entire scheme whereas if pooling were made optional, in the case of such legal decision the machinery could continue to operate.

After perhaps one hundred and fifty speeches had been heard for and against the "compulsory pooling amendment" the roll was called. The vote stood thirty-eight for and sixty-one against with two delegates absent. Immediately afterwards the vote was taken upon the ratification of the plan as presented by the Committee and it was passed unanimously.

Preparatory to the submission of the plan to the delegates, speeches were made by J. R. Howard, C. H. Gustafson, Chairman of the Committee of Seventeen, and Henry C. Wallace, Secretary of Agriculture. Mr. Howard stated that farmers were seeking no class privileges but a stabilization of markets wherein the farmer gets the benefit of the economic working, not the effect of the manipulated working, of the law of supply and demand. The Committee of Seventeen made no endeavor to organize farmers for the limitation of production thereby increasing prices with smaller output or to establish monopolistic control. "Only that thing in our marketing plans—and, indeed, in our entire national structure—which will benefit all classes can be of lasting benefit to any."

The New Plan

The principal features of the plan of the committee were made public some time ago. It provides for the establishment of a national sales agency known as the United Grain Growers, Inc., which will be the overhead organization. This corporation is to be a non-stock, non-profit company to be operated on a cost basis. Bona fide producers of grain will become members upon payment of a membership fee of \$10.

Members will then unite in local co-operative elevator companies which must be truly co-operative and pay dividends on a patronage basis, or in local grain growers' associations. The individual grower will contract to sell his surplus grain

for a period of five years exclusively thru the local company or association. The grower may decide to sell his grain outright to the local company, sell it on consignment or he may join with other members of the local unit in a pooling arrangement.

The members of any local pool may elect to unite with one or more pools in the selling of their grain. Under this plan of selling the time and rate of marketing of the pooled grain would be under the direction of a pooling committee of the National Association. Thus the way is paved for the building up a big national grain pool under centralized control.

The local elevator company or local grain growers' association will contract in turn with the national association to handle the grain of its members under each of the plans which may be elected by the individual growers.

The national association will be under the management of a board of twenty-one directors elected by delegates to the annual convention of the association. These delegates are chosen at conventions held in each Congressional district at which each local elevator or grain growers unit is represented by one member. The directors in turn will elect the officers of the national association from among their own number with the exception of the Secretary and Treasurer.

The Board of Directors is authorized to establish such departments as Sales, Transportation, Organization, Legal, Finance, Statistical, Publicity and Pooling.

It is also authorized to organize subsidiary corporations for carrying out its functions or to hold ownership in them. These include branch sales offices at important grain markets to handle the grain for each natural grain district; terminal elevator companies; a finance corporation whose capital stock shall be subscribed by the members as far as possible; facilities for marketing the exportable surplus of grain; service departments furnishing information upon local, national or world-wide conditions affecting the grain trade as well as upon legal, transportation and other problems.

The working capital for operation is to be obtained from the membership fees of growers and later on by deducting certain amounts from the sales of grain handled for which certificates not bearing interest will be given by the national association to the elevator company, which in turn will issue certificates to its members. These will have no definite maturity.

After the adoption of the plan, the Com-



C. H. GUSTAFSON
Chairman, Com-
mittee of 17



Directors of the United States Grain Growers, Inc.

tee of Seventeen divided the United States into twelve grain growing districts allowing to each district one man on the temporary board of twenty-one directors for each 60,000,000 of grain sold.

Twelve resolutions were adopted by the delegates as follows:

That Congress enact legislation permitting farmers to bargain on an equity with purchasers of their products.

That the tariff be revised, to reflect the difference in the cost of producing farm products at home and abroad.

That short selling be prohibited.

That any substitution of a sales tax for the present excess profits tax be opposed.

That the railroads be asked to grant lower freight rates.

That Congress assist in the development of the Great Lakes—St. Lawrence waterway project.

That larger credit facilities be extended to agriculture thru the Federal land banks.

That the Federal Reserve Bank Act be revised to provide more fully for the legitimate needs of agriculture.

That Secretary Wallace be commended for his stand on the question of co-operative marketing.

That the contribution to co-operative marketing problems by the late Dr. Charles McCarthy of Wisconsin be highly commended.

That the profit made by the U. S. Grain Corporation in handling wheat be set aside as a permanent revolving fund to furnish an additional credit for moving crops.

That the directors selected to put the new marketing plan into operation work co-operatively with existing farmers' organizations.—Glenn G. Hayes.

The Pennsylvania Bureau of Markets

One of the Service Bureaus of the State Department of Agriculture

(Continued from Last Week.)

By J. C. GILBERT, Acting Director

Co-operative Associations

THE most significant economic movement in America today is the co-operative movement. Nothing succeeds like team work. Common interests bind men together and the petty differences which have kept them apart sink into insignificance.

Pennsylvania has 164 farmers' co-operative business associations. Some of these were organized under the law of 1887 but since the enactment of the co-operative law of 1919 practically all associations are availing themselves of its privileges.

Co-operation has seemed so simple that it has met with disaster at many points along the line and for the very reason that it appears so simple. No business will run itself no matter what its foundation principles are. More co-operative associations have failed because of lack of proper management than anything else. Very often over-zealous folks organize because of a supposed wrong having been done them by a dealer or group of dealers and without much knowledge of the real facts in the case.

The purpose of the Bureau of Markets in this line of work is not to force co-operation upon the farmers nor even to urge them to write but to help them to choose the right methods in organizing. There are repeated instances where our co-operation specialist has argued against co-operation because he saw no valid reason why an organization should be formed.

Transportation and Storage

The help given is that of reviewing the articles of incorporation and request for charter, assisting in formulating a constitution and by-laws and then in seeing that proper business methods are installed including an adequate accounting system. Many organizations because of lack of knowledge of their affairs have found themselves to have been insolvent for a considerable period before the inevitable crash came. The law of 1919 provides for yearly reports to the department of all co-operative associations organized

as such. These reports are reviewed by the bureau and it is possible to render aid before an association's affairs become hopelessly involved.

By working in close co-operation with the transportation companies in the state the bureau is in position to assist growers and shippers in their transportation matters such as car supply, arrangement of schedules where special service is necessary, icing services and other matters of dealings with railroad and express companies. One relation that the bureau has in this connection is that of advising with shippers and transportation people on methods of packing for shipment, loading cars and the use of proper shipping packages.

The bureau by surveying a producing area before shipping begins renders great assistance to both the producers and the railroads in estimating the number of cars needed to ship the crop.

The bureau stands ready to adjust differences between shipper or receiver and transportation companies.

The development of motor truck routes to move farm products is of importance to the agriculture of the state. Altho the bureau has done little more than inquire about the general use of trucks it will make surveys and assist communities with their truck transportation problems when requested to do so.

Grades and Standards

The whole future of the handling of farm products depends upon the establishment of proper grades. Unless these are established the development of co-operative selling organizations will be very much restricted.

The work of the bureau on this subject is one of the most important of its duties.

No farm product in Pennsylvania lends itself better to work on grades than apples. The State Horticultural Association in 1920 asked the bureau to work out apple grades. The work of the United States Bureau of Markets was taken as a basis and avoiding the mistakes of other states along this line a list of tentative grades was

worked out and submitted to the growers of the state for trial. Their experiences and suggestions covering a period of two years will guide the bureau in its work and within another year a workable set of grades can be safely promulgated.

The Apple Packing Law of 1917 is administered by the Department of Agriculture and has been assigned to the Bureau of Markets for enforcement. This requires a considerable amount of inspection work. During the apple shipping season of 1920-21 the Bureau kept five inspectors on the road all the time visiting the dealers who handle apples. Very few cases of deliberate attempts to defraud were discovered. Practically all irregularities were due to ignorance of the provisions of the law. Letters explaining the cases were sent to the packers of the fruit and we have instances on record of better returns in actual sales resulting from the work of these inspectors.

No grades have been promulgated for any Pennsylvania Farm Products. In the near future, however, hearings will be held on grades for some of the principal farm products, notably potatoes and grain.

It is obvious that in order to have grades that are at all uniform with those in surrounding states they must not be arbitrarily established by any state but by co-operation with the U. S. Bureau of Markets and other state bureaus. Since the United States Bureau has jurisdiction only over products shipped in interstate commerce it devolves upon the states to promulgate and administer the grades within their borders. If there is to be any comparison these grades within the states must be at least similar in the different states. This can be brought about only by co-operation with the United States Bureau of Markets to make the grades established National Grades. An example of this is the U. S. Potato Grades which are gradually becoming adopted in all sections as standard and will be promulgated in Pennsylvania this season after hearings have been held.

The U. S. Grain Standards made mandatory by Congress must be promulgated in this state and as soon as a grain man is secured to take (Continued on Page 9).



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OUR JOB is to serve our readers. Whenever you are puzzled, write to us and we will help you if we can.
—The Editors

The best portion of a good man's life are the little, nameless unremembered acts of kindness and love.
—Wordsworth.

Delegate to Rome

WILLIAM H. STEVENSON, Vice Director of the Experiment Station of the Iowa State Agricultural College, has been appointed permanent delegate of the United States to the International Institute of Agriculture at Rome, according to an announcement just made by the United States Department of Agriculture. The appointment became effective May 1, and was made to fill the vacancy caused by the resignation of Dean Thomas F. Hunt, President of the State Agricultural College of California, who served as the United States member of the permanent committee of the Institute while he was on sabbatical leave from the University.

The Committee of 17

WE PUBLISH this week on page two an account of the adoption of the report made by the Committee of 17. This committee was appointed several months ago and worked diligently, studying the present wheat marketing methods and comparing ultimate prices with those received by farmers. While our territory is not included among the regions or districts covered by the organization, we believe our people will be interested in knowing something of the working plans of so radical and gigantic scheme of marketing as is proposed. As might be expected, middlemen and grain traders ridicule and criticize the plan adopted and prophesy failure. Since it is the biggest co-operative marketing proposition any class of farmers have ever undertaken it is worth watching with sympathetic interest. The committee has done well not to include any features that might be misconstrued by the public as being monopolistic, or of being used to restrain trade.

Salaries

WHEN people talk about salaries of \$25,000 to \$75,000 a year in the railroad business being excessive, they do not stop to think that successful men in all lines of business make more. There is hardly an opera star, or a moving picture star, who does not make more. The public goes to the movies night after night and indirectly pays Charley Chaplin many times as much for getting his face smeared with pie as it pays any man in America for managing a railroad. We are not here arguing for the payment of excessive salaries in any line, but since all business is

Pennsylvania Farmer

May 14, 1921

more or less competitive, and we universally accept that principle as the most practical at present, it is real economy to pay salaries such as will attract and keep men and women who can best do the work required. If we do not, it is natural that they will seek more remunerative places. The present plight of the educational system with regard to teachers is a concrete and costly example.

Crop Conditions

ALL REPORTS indicate a satisfactory condition of crops in nearly all sections of the country. Wheat and grass are making splendid growth and promise big yields. In a few sections lack of rain is something of a menace at present. This is especially true in the Southwest. About the usual acreages of corn and potatoes are being planted. Early potatoes in some Southern districts have not come up well. Cool, wet weather in the Northwest menaces the early potato crop. There is no indication any place of a record-breaking fruit crop. In all places except the most northerly sections the stone fruits will be largely a failure, due to the freezes in March and April. Early apples were also injured in the milder sections where the previous warm weather had forced the blossoms. Because of these conditions, and the fact that freight rates are so high, the wise Eastern fruit grower will bend every energy towards bringing what fruit he has to the highest state of perfection and be ready to take the best possible care of it at maturity.

True and to The Point

THE FOLLOWING is quoted from an editorial in the business section of the Public Ledger:

Are retailers bearing their share of the readjustment of business? Herbert Hoover says they are not. Others in position to speak with authority agree with him.

In a general discussion among business men yesterday all present agreed that with labor liquidated prices must be reduced. The opinion of all present seemed to be expressed by one man who said:

"Raw materials are down to the bone, so to speak. Look at cotton, wool, leather, copper. Look at all the products of the farm. The farmer and the producer of raw material has had to take his medicine. Some of the middlemen have not taken theirs and do not seem inclined to take it, but they must."

"The cost of living must be reduced more than it has been or labor will feel it has been treated unfairly. In many lines of retailing prices are not down except in a small degree. It may be owing to the excessive costs of retailing. We've got too many retail establishments. One-half the number would serve the public better than do the many now in business. Prices of foodstuffs still vary greatly in different localities and sometimes in shops in close proximity. If purchasers exercised more judgment in the distribution of their patronage many concerns now in the retail field would have to lock their doors or put up their shutters."

"There is no warrant for some of the prices charged in restaurants—plain, ordinary restaurants, patronized by men who have to count their diners. The charges are the same in many instances as they were last year, yet coffee has come down from 43 cents a pound to 22 cents, butter has dropped from 80 cents a pound to 43 and eggs and meats in proportion."

"How do they get away with it? And how do the better-class restaurants get away with the prices they charge? It would startle a farmer if he went into some of those places and saw what they got for the products of the farm for which the agriculturist gets little."

Conditions and Prospects

UNTIL very recently people talked one thing and thought another. They acted upon the same principle as the boy who whistles to keep up his courage while at the same time he is shaking in his boots. By common consent, business men in general have talked hopefully and newspapers have spoken optimistically even when things looked the darkest and business was at a standstill. It is well that this was so, else we would have probably had a real panic.

But it can now be truthfully said that business is "picking up." The secret fear that filled men's hearts the past few months is disappearing and they are now whistling, not to keep up their courage but because there is plenty of assurance that we are past the worst and that from this on there will be improvement even though it be slow.

There is general agreement that the lowest point has been reached and that now business is moving on the up-grade. The fact that this feeling exists will be a big factor in expediting the movement.

Governor Harding of the Federal Reserve Board, recently said before a body of business men: "We have passed thru our worst troubles and the problems ahead of us are all solvable. There is now no danger of any general financial trouble in this country." The feelings of optimism and confidence that pervaded the meeting of these hard-headed business men is most encouraging because they are the men who keep a close finger upon the business pulse of the world. The motto of the gathering as expressed by a huge electric sign was, "Greater Prosperity thru Greater Foreign Trade."

We have been trying to point out this fact to farmers during the past few months. It is most short-sighted to adopt a permanent policy which will prevent the re-establishment of a normal foreign trade simply to enable us to realize on one season's crops produced under abnormal conditions. There have been too many fool things said and too many quack remedies proposed to convince the thinking man that all the plans proposed were conceived by men who looked beyond the ends of their noses. Our only serious national troubles are those arising from unsettled international problems. When these are settled and our place in the world's trade resumed, our minor difficulties can be solved readily.

Our Washington Letter

Hearings on the Smoot Federal Farm Loan act amendments will be held before the Senate Committee on Banking and Currency some time this month. The first of these amendments, Senate Bill 431, provides for the liquidation of joint stock land banks. Section 16 of the act creating the joint stock land banks is repealed, with the exception that a joint stock land bank incorporated before July 1, 1919, may continue to operate under the act, with certain restrictions until July 1, 1924, when all such banks must go into liquidation.

A second amendment, Senate Bill 432, provides that the Federal Farm Loan Board shall levy assessments upon the Federal Land banks and joint stock land banks sufficient to pay its estimated expenses and the salaries of its members.

A third amendment, Senate Bill 433, removes the tax exemption features from joint stock land bank bonds.

The avowed object of these bills is to put out of business the joint stock land banks. It is believed by friends of the farm loan system that the real purpose of the proposed legislation is to destroy the farm loan act. They apprehend that joint stock land bank feature being the weakest link in the system, it has been selected as the most vulnerable point of attacking the act. It is at least well known that at least some of the professed enemies of the joint stock land banks are none too friendly toward the Federal farm loan associations.

There is a strong sentiment against tax exemptions of every kind. A movement designed to secure an amendment of the Constitution prohibiting the issuing of tax free bonds, either by the states municipalities or Federal government, is receiving powerful support from many sources, and the advocates of the movement have the use of some excellent arguments. Secretary of the Treasury Mellon estimates that there are now ten billions of tax-exempt securities issued by states and municipalities, constituting an "economic evil of the first magnitude." Wealthy people are investing in these bonds to escape taxation, and the government is seriously feeling the loss of the revenue thus entailed. It is a point worthy of note, however, that the evils of the tax exemption of government, state and municipal authorities were not "discovered" until the farm loan bonds were exempted from taxation.

If the purpose of the farm loan act is to provide money at low rates of interest for agricultural development and production, then that money must be raised in a special market. And up to this time the only way that has been devised for creating a special market in which money can be secured at low rates is that of issuing tax free securities. Hence, the tax free farm loan bonds. From this standpoint, it is argued that the farmers and their organizations have considerable interest in making an effort to save the tax exemption on farm loan bonds, at least until municipal bonds and all other government securities are denied this tax exemption privilege. There is no telling what this Congressional tinkering may do to the farm loan act.

The endorsement of the principles contained in the McFadden-Kenyon rural credit and multiple insurance bill, by the executive committee of the American Farm Bureau Federation, has brought this proposed measure to the front as a constructive farm credit proposition.

The House committee on Interstate and Foreign Commerce has voted not to report out any daylight saving legislation.—E. E. Reynolds.

May 14, 1921.

HARRISBURG LETTER

The Legislative Grist.—It will require all of the three weeks remaining of the constitutional period allowed the Governor to dispose of bills after the general assembly adjourns to thoroughly sift the results of the 1921 session. So many bills were shot thru in the closing week after the House's revolutionary action of changing speakers that the whole force of the attorney general's office has been at work studying the legislation and preparing to advise the Governor. The plan is to devote the next 10 or 12 days to general legislation and the rest to appropriations because by that time it can be estimated what the revenues will approximate. It should be remembered that only the most general statements were made during the session as to the amount of money that could be appropriated and since the session the clerks have been at work for days trying to find out what was voted. The whole situation is one seldom known on Capitol Hill and will require the greatest care by the Governor.

Cleaning House.—Auditor General Samuel S. Lewis, who assumed office Tuesday, gave the Capitol something to think about when he ordered an audit of the ledgers of his department because he said he could not tell the exact situation of the finances. The new auditor general announced that the statements did not satisfy him and introduced methods followed when a post office is transferred. On top of this he proceeded to drop from the payroll seventeen persons, three of whom were found drawing pay in other departments and abolished five "special" places, which he had promised the Legislative League he would do. The net saving will amount to thousands of dollars a year.

The Revenue Bills.—First of the revenue bills to become a law was that doubling the collateral inheritance taxes. This takes effect as of May 4 and just what it will yield is rather problematical. The anti-raricite and gasoline taxes are bound to result in litigation and there may not be as much money to appropriate as estimated by the legislators when they made their guesses in the wind up.

Going After Dog Owners.—Steps for energetic enforcement of the dog license law, which it is expected the Governor will sign, are being taken by Secretary Fred Rasmussen and agents are now at work in several counties sizing up the situation. The first arrests have been made in the east, but in the sheep raising counties things will be started soon.

Change in Game Laws.—Governor Sprout's approval of the Catlin bill, making a number of changes in the game code, makes them effective at once and there is an important new provision in regard to damage by bears or other animals. Such animals or birds as are caught damaging crops may be killed, but the person doing it must report the act and also be prepared to present proof that damage was being done. There is also a definition as to what can be done in the way of pursuing animals causing damage. Steps will be taken at once to get the new provisions before the public, but the distribution of the acts will depend on the printers' strike.

The Prohibition Code.—While the new prohibition code does not please people on either side state authorities declare it will work out and do much toward bringing to an end the situation prevailing of late. And it is also predicted liquor will be the great issue in the next campaign with chances of some strenuous times over legislation in 1923.—Hamilton.

NEW YORK LETTER

Farmers Grow Seed.—Farmers of Cayuga County are organizing to grow certified seed of Cornell No. 11 corn on a large scale. A group of 40 Cornell agricultural students will this week inspect farms of Cayuga County where beef cattle, Jerseys, sheep and swine of high quality are grown.

Cheese Down.—In northern counties cheese has reached the low minimum price for nearly 20 years, or 14 cents a pound, with almost no demand.

Maple Syrup Slump.—Buyers are

offering but 75c a gallon for syrup and 7c a pound for maple sugar to producers in northern counties where there is no organization to market the sweets. Farmers declare it an effort to break organizations, and are holding back. It cost \$1.75 per gallon to produce syrup by the average producer this year.

State Leads in Cows Under Supervision.—For the first time New York leads in the number of cattle under supervision in eradicating tuberculosis. The nearest competitor is Minnesota with 22,216 animals less. The county veterinarian plan has increased the amount of testing and office bank, with others to follow, is co-operating in advancing 75 per cent of indemnity claims to dairymen so that at least partial restocking of dairies can be made at once. The total of once tested free herds in the state was 1,110 at the end of March, and there were 82 Federal accredited herds. Tompkins county alone in April tested 5,560 animals and found but 55 reactors.

Rural School Investigation.—Ten counties have been investigated as to rural school conditions by a corps of noted education experts. Six distinct lines of inquiry are carried on, and all the facts are wanted. The first report will not be ready for some time yet it is found that in the state there are 15 schools being maintained at a cost of over \$12,000 to educate but one pupil each; 52 schools with but 2 pupils each, at a cost of about \$42,000 a year; and 1085 schools with the number of pupils ranging from 1 to 5 each.

Annual Season Opens.—For the first time business looks well for the new crop season. Rates are 20 per cent lower than rail freight rates and terminals are full of freight. Thirteen barge fleets are preparing to open the season.

NEW JERSEY NEWS

New Baby Station.—With the opening of a Baby Keep-Well Station in New Brunswick, the State Bureau of Child Hygiene now has 75 health centers for mothers and babies under its direct supervision. The new station is located in a school building in the Middlesex County city, and will be open every Wednesday from 2 to 4 P. M. For expectant mothers, pre-school children and babies. Another baby station was located in New Brunswick some time ago, and it became so successful that it was decided by the bureau, which is allied with the State Department of Health, to open the second one. These stations throughout New Jersey supplement the visits of child hygiene nurses in the homes, and the combination has been most pleasing in lowering the death rate among babies and in preventing sickness. Mothers are instructed in the right methods of care and feeding before rather than after illness becomes apparent in their babies. Thru this systematic health supervision, defects are promptly detected and corrected before they have had a chance to seriously hamper the child's development.

Women in Farm Service.—A woman's branch of the Morris County Farm Service Exchange is in process of organization at Morristown, the county seat. It is planned to carry on, probably in the same building with the exchange, a business dealing with the things needed in the farm homes. Initial steps were taken in the matter by Miss Cora Hoffman during her term as demonstrator in Morris County and the plans have been carried on by Miss Marion Butters, the present demonstrator.

MARYLAND LETTER

The fruit crop outlook in the western section of the state has been summarized by Lancelot Jacques, Sr., the fruit expert of Smithfield, in a few gloomy words: "There will not be a peach in the Cumberland Valley between Winchester and Harrisburg." The prediction made by Mr. Jacques is based on a recent investigation made of the orchards which shows that the peach crop, compared with even ordinary years, will be so small as to be almost negligible. The same is not true of apples, however, as the investigation just completed shows a fair percentage of apples escaped the two killing blasts of last month.

Pennsylvania Farmer

5-521



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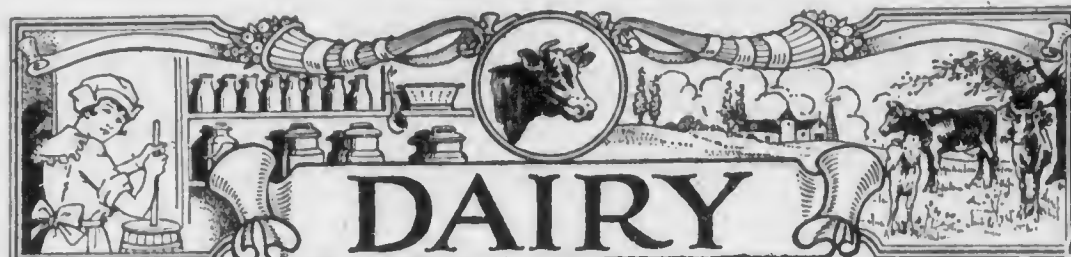
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NEW MILK POOLING SCHEDULE

At last the Dairymen's League has won thru in its campaign to secure the requisite number of signatures to pooling contracts and the new pooling schedule went into effect Sunday, May 1. There has been much conjecture even on the part of supporters of the plan as to the details to be adopted. After intensive study of the many milk marketing problems the League officers announce that milk will be divided into four classes. They have aimed to do away with complaints of dealers that they are forced to buy surplus milk of the League at top prices set by the League.

The price in all classes but the first it is said will be determined by market conditions; in the first class the cost of production and market conditions will be considered. May prices are yet to be determined.

Class one will consist of milk sold in fluid form and milk made into cream with the skim milk sold in fluid form. Production costs will receive more consideration in this class it is understood.

Class two includes milk made into cream and skim milk used in any manner desired by the buyer except that the skim milk cannot be sold in fluid form. It also includes milk to be made into plain condensed milk and in the manufacture of ice cream and soft cheeses.

Class three includes milk used in sterilized, evaporated whole milk, manufactured into sweetened whole condensed milk, made into milk powder, or made into cheese of the Swiss, Limburger and others of similar type.

Class four includes all milk made into American butter or cheese.

With these instructions it is easy to see how prices will range on the various classes if there were no pool to level the prices. The producers must be patient for a time and do all possible to bring about harmony with each other, with dealers and with consumers. This is a big venture, with many ramifications and much is involved. But we are convinced the great majority of producers will agree that this is a firmer basis than milk has ever been sold on in this big eastern territory.

On April 22 the directors voted to put pooling into effect as all but 700 signatures were on hand, and they were coming in at the rate of 150 a day, with eight days remaining before May 1.

Adjusters are being appointed rapidly. They are local dairymen who are officially designated to see to local affairs, pay out checks, hear complaints, etc. The money to meet the monthly checks will be deposited by the League in local banks. It is hoped that dealers will be obliged to pay more promptly than some have and that the former may be able to get his money promptly. In the past many dealers have done business in the farmer's money, holding it a month or two or even more in arrears all the time.—M. F.

JESREY BREEDERS ORGANIZE

A meeting of the Jersey breeders of Susquehanna County, was held in Montrose, Pa., recently. A motion

picture film of Jerseys entitled "Hearts and Jerseys," was presented at the Ideal Theatre, after which the Jersey men adjourned to the farm bureau rooms where the first important step taken for the county breeders was made by organizing under the title of Susquehanna County Jersey Breeders' Association.

All the members seemed to favor the accredited herd plan. Although there are several members on the accredited plan, there is only one of the herds that is now accredited. This herd is owned by Selden Birchard, of Birchardville, who is the possessor of Jap's Cosy 335099 with a record of 6,651.9 lbs. milk, 404.81 lbs. fat at three years, eight months of age, who furnished the fine cover cut in the Jersey Bulletin of Nov. 24, 1920.

The following officers were appointed for the organization: President, Claude Carter; vice president, George Dayton; secretary and treasurer, Selden Birchard. The seven directors including the first named men are E. V. Birchard, W. L. Bailey, Clayton Hall and Frank Smith. The fees for this association has been fixed at \$2 per year.

The association has already made plans to make an auto tour of inspection among the Jersey breeders of the county during the coming summer, and has accepted the invitation of the secretary, Selden Birchard, to partake of a basket lunch at his pleasant farm home in Birchardville. This new organization is due to the zealous efforts of Mr. Fague, the county farm bureau agent, and one prominent dairyman.—E. M. L. B.

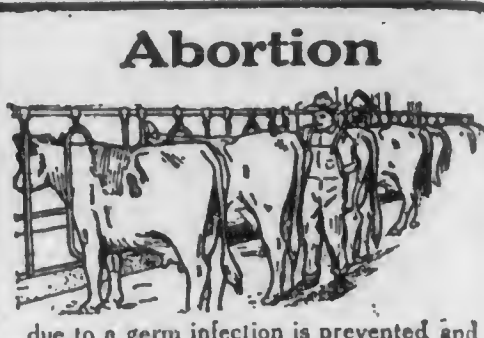
THE HERD SIRE

In selecting a herd bull it pays to buy an animal with the best pedigree that can be obtained for the money. But do not buy on pedigree alone. Vigor and breed type are of great importance. Some bulls will have prepotency which is the ability to transmit certain desirable qualities to their calves. Other bulls seem deficient in this respect. A bull might have the names of several famous sires in its pedigree and yet be a poor animal to use for reproducing cattle.

Not all of the good points of a bull can be told in one or two years. The breeder must wait until the offspring have reached the age of production. Some breeders have found out that the bull which was butchered several years before was really a wonder at producing calves and should not have gone to the block. When a bull has been tested and found valuable it pays to keep him as long as results are good.

If the old bull becomes ugly he can still be held for breeding purposes if given a yard built of cement posts and strong iron bars. Some breeders do not dehorn young bulls but keep them with horns until signs of an unruly nature appear. Then the horns are taken off and the experience serves to quiet the disposition of the animal and make him more easily managed.

A bull needs exercise and it is bad management to keep him in a half dark box stall where he cannot enjoy the sunshine or see much of the other cattle. A small outside pen will



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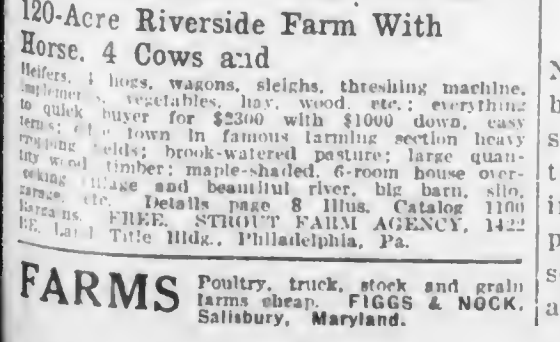


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prove a good exercise yard. The owner can clean the pen when the bull is inside and clean the enclosed stall when the bull is in the yard. A strong easily operated door can separate them while the work is being done. This will make the management of the bull easier and he will receive better care. There will be less danger of accidents.

A strong cable can be used to fasten the bull when taking outside exercise. It never pays to give the animal too much freedom as the gentle bulls often show sudden signs of meanness. It looks alright in the funny paper to see some wild-eyed gentleman being chased by a bull. In real life it is different as those with experience will testify. The farmer who has seen a neighbor after an encounter with a bull is very apt to use great precaution in handling bulls for the remainder of his life.—R. G. K.

THE GOOD THING ABOUT IT

When crises come in the milk business, and they have made their appearance pretty frequently of late, it is difficult to see any bright side to them. Naturally we are troubled over these difficult situations and wonder how we shall be able to shape our plans for the future. Uncertainty robs the man who is inclined to look on the dark side of a great deal of the enjoyment he might otherwise get out of his business. But there is one comfort, at least, and it is one which may lead to a great many others.

The young president of our county Dairymen's League is in considerable demand as a speaker on current movements in the milk business, and as he goes up and down the country, everywhere this is a part of his plea: "Get rid of your poor cows, men. That will do more than any other one thing to relieve the situation. You know which are the cows in your herds that do not pay their way. Sell those cows off. If there is any surplus, which I do not believe, this will be one way of reducing it and it will save you work and lessen the cost of producing milk."

And our farmers are gradually coming to see the wisdom of this advice. The statistics published at Washington tell us that there are more than 6,000,000 farms in this country. Not all of these are devoted to dairying. Suppose one-half of them support cows. On all these three million farms there is no doubt one cow that is not quite what she should be to make her profitable. Let that one cow be sold, not to another dairyman but sent to the meat market and it would cut off a large percentage of milk and put an end to the oft-repeated assertion on the part of milk distributors that the reason why they cannot pay a living price for milk is because there is so much milk they cannot handle it profitably. And, best of all, the cows that are left would be better and bring in a better return, which would be a bright light in a dark day.—E. L. V.

OHIO'S GUERNSEY FIELD MAN

James E. Harper, of Otsego Co., N. Y., has been employed as field man by the Ohio Guernsey Breeders' Association. He will devote his entire efforts to breed promotion work in the state, with headquarters temporarily at Chagrin Falls. The Association was fortunate to find available a man of his qualifications.

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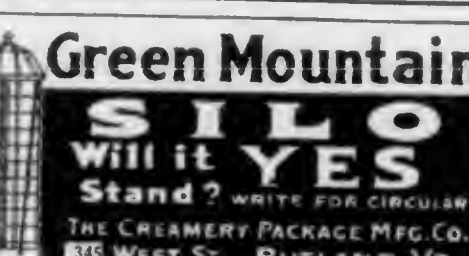
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Continuous Open Door Front. Permanent steel ladder attached. Size 10'x20' \$121.00
Size 12'x24' \$171.25
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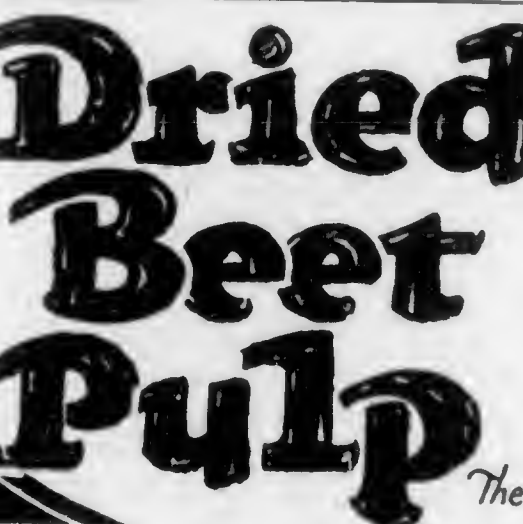


**Green Mountain
SILO**

Will it YES

Stand? WRITE FOR CIRCULAR

THE CREAMERY PACKAGE MFG. CO.
315 WEST ST. RUTLAND, VT.



Dried Beet Pulp

"Countess Prue"
World's Champion Guernsey
Consumed 5470 lbs. of Dried Beet Pulp in making her wonderful year's record—equally valuable in the ration of the average cow.

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Please Mention Pennsylvania Farmer When Writing to Advertisers

YOU MUST SPRAY to kill potato bugs

If You Spray with

Hydroxide

you will kill potato bugs, repel flea beetle and keep your foliage healthy.

A maximum crop is the only one that will pay you. An average crop will not.

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will help you get the maximum crop.

The spray with the
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We make a full line of spraying chemicals—Lime Sulphur, Scale Oil, Lead Arsenate, Para-dichloro-benzene, Chemical Lime, Dusting Mixtures, Sulphur (all kinds).

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Insecticide Dept., Camden, N. J.

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A Power Cultivator for All Truck Crops

New 1921 MODEL

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Solve your labor problem with this dependable new improved latest model implement, equipped with Bosch Magneto, Extra-wide water-rolled motor, case hardened gears, correct bearings, no trouble lubricating system.

DOES WORK OF FOUR MEN
Cultivates, harrows, discs any soil, clay, sand, loam or muck. So easy to guide, turn or back up, a child can run it. Pulls 100 lbs. of truck, tractor, garden, and estate, etc. etc. Find it more than 1000 times better than any other.

Guaranteed to do all we claim or money back, no question. Price \$235.00. P. O. Box 100, Cleveland, Ohio.

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CHOICE TERRITORY OPEN

What Is "Celery Profit?"

Take the selling price of your celery crop, subtract the cost of seed, of planting, bleaching, boards, digging, and the amount left is "celery profit." Sometimes the selling price is barely enough to cover the cost of production.

Make Profits Bigger

Areandee Celery Bleacher is much cheaper than boards. The stiff, waterproof strips exclude all light and dirt. Two men can apply it almost at the speed of a walk. May be used for years without renewing. You'll be surprised at the low cost.

Send for circular and sample

The Russelloid Company,
BOX P, HARRISBURG, PA.

The value of the manure produced is saved because the cattle are fed in a covered yard. The farm manure is supplemented by a liberal, yet intelligent use of high grade fertilizer. This man knows how to grow plants in the field. These plants for seed production are selected and staked just before harvest.

"The chief factor in the production of this man's phenomenal crops of tomatoes is the fertility of his

HORTICULTURE

Tomato Growing Problems in Maryland

By E. E. REYNOLDS

A BUREAU of raw products research is maintained in Washington by the National Canners' Association. C. G. Woodbury, who has charge of this research work recently made some investigations of the tomato industry in Maryland for the purpose of finding out how the canner may assist the grower to secure more satisfactory returns from the crop.

Mr. Woodbury found that certain Maryland tomato growers are producing some of the largest yields per acre ever recorded for crops grown on a commercial scale. He also found that Maryland average yields are less than they should be. During recent years the average has been about 3½ tons per acre. In 1919 it was only 2.6 tons per acre. Contrasted with this situation are the average yields of recent years in Colorado of 8½ tons, in California of seven tons and in Utah of nine tons to the acre.

What are the reasons for these differences? Mr. Woodbury answers this question by saying that the principal influences which have operated in determining the rise and fall of different parts of the United States in the production of special crops have been markets made available for transportation, a producing population following improved transportation, and fertility of the soil.

As for Maryland, he says that from a study of the influences which have operated in the agricultural development of our country, and of the migration of particular types of crop production from one section to another, the deduction cannot be escaped that upon fertility of the soil, its conservation and its improvement, depends the future of the Maryland canning industry. Tomato yields per acre are better in some sections than in others not wholly, but primarily, because of a better average soil fertility.

"The soils of Maryland have been depleted of their original fertility thru a longer period of cropping than most of the soils of America have been subjected to. This original fertility must be restored thru better farming methods. If the average Maryland yield of tomatoes is to be substantially increased, no program of permanent improvement based upon treatment of symptoms will be successful if it ignores the basic need for improved soil fertility.

"Now let us get down to cases," says Mr. Woodbury. "This is a Maryland question. Let us find a Maryland answer. Over in Harford county there is a farmer, who, last year grew 4½ acres of tomatoes. On this acreage he raised 19.16 tons of tomatoes per acre. He received for his crop \$1699.90 gross income. He realized a net profit of \$218.82 per acre on tomatoes grown for and sold to the cannery, after all charges for fertilizer, manure, horse and man labor, interest, etc., had been deducted. Such a record was worth investigating, and a trip was made to find out how these results had been secured. Why had this grower produced over five times the average yield? The reasons were exactly what might have been anticipated. The grower is first of all a good farmer; the fertility of his soil is being built up by an abundant use of stable manure produced on the farm. This man was formerly in the dairy business with a herd of 24 cows. He sold his dairy herd last year and is now feeding 25 steers. The value of the manure produced is saved because the cattle are fed in a covered yard. The farm manure is supplemented by a liberal, yet intelligent use of high grade fertilizer. This man knows how to grow plants in the field. These plants for seed production are selected and staked just before harvest.

"The chief factor in the production of this man's phenomenal crops of tomatoes is the fertility of his

soil. The soil on this farm is probably a few million years old, at any rate it is just as old as the rest of Harford county, yet by intelligent handling its fertility has been built up during the 19 years the present owner has lived on the farm, until it now produces nearly 20 tons of tomatoes per acre; or from 90 to 100 bushels of corn, or from 175 to 300 bushels of potatoes.

"When this man bought the farm back in 1900 his neighbors said he couldn't raise a crop on such land. In 1919 one of these neighbors raised 200 bushels of tomatoes on eight acres, while this man raised 375 bushels on one acre. There are only 85 acres in this farm, and the owner said that every acre is covered at least once in two years with stable manure at the rate of from 8 to 14 loads per acre. A manure spreader is used, and hauling is done whenever the ground is not too soft. The farm supports three families, the father and two married sons. 'We work pretty well together,' the father said, 'and the farm gives us all a good living, too.'"

Replying to a question asked by Mr. Woodbury as to how the average Maryland tomato grower can increase his yields, Prof. L. C. Corbett of the U. S. Dept. of Agriculture, said he believed that "if the canners were to foster a 'maintain fertility propaganda' which has as its object the use of green manuring crops, supplemented by the proper use of fertilizers, much could be accomplished in the direction of increasing yields."

Prof. Corbett advised the working out of a contract plan which on a 5-year basis as an average, will give the grower as good or better returns than he gets from free or non-contract acreage. "Two other ways in which in my judgment," he says, "canners can be of great assistance to the tomato business, are by discouraging the poor grower in continuing in the game, and by refusing to buy anything except good quality product. The poor farmer, by that I mean one who obtains small yields year after year, almost invariably produces a low grade product. His product is not worth as much to the canner as that of the good grower and by growing a small yield he makes no money from his enterprise."

Continuing his search for an answer to this Maryland question, Mr. Woodbury visited Talbot County on the Eastern Shore. "There," he says, "I went out to see one of the leaders of the farmers' organization movement. He received me cordially, and invited me in. While we sat on his veranda looking across the quiet waters of the inlet, which is at once highway and private fish, oyster and duck preserve, we talked over the history of tomato growing in Maryland. 'You have observed this industry in this region since its beginning; has it proven an asset or a liability to Maryland agriculture?' 'I can answer that best,' he replied, 'by a bit of personal history. Years ago a certain section hereabouts was so poor and poverty stricken that the common saying was that a crow would have to carry his own corn if he tried to fly across it. The folks from that district used to come to our town with string harness, wearing one gallus, and barter their stuff on the street. They were poor and carried all the signs of poverty. I was away from my home county 25 years. When I came back it happened to be over in this district I am telling you about. There had been a wonderful change. Houses were new, buildings were painted, and signs of poverty had disappeared. I found that the change was due to tomato growing and the cannery, which had come in and got established. There is no doubt that the tomato business has been a big asset to our farmers.'"

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the quickest available Ammoniate to hasten crops to maturity; imparts vigor, prevents wilting in hot weather. Stocks on hand at principal Atlantic Seaports for prompt deliveries.

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An Insecticide
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That Contains
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Also makers of the Non-Arsenical Insecticide, BUG DEATH, for Chewings Pests

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As a veterinary remedy its curative qualities have been acknowledged for many years in cases of Curb, Splint, Sweeny, Capped Hock, Strained Tendons, Spavin, Ringbone and other bony tumors.

A Perfect Antiseptic
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For treatment of Rheumatism, Sprains, Neuralgia, Lumbago, Sore Throat, Stiff Joints, Cuts and Bruises it is invaluable. \$1.75 per bottle at druggists, or sent by parcel post on receipt of price.
The Lawrence-Williams Co., Cleveland, O.

BINDER TWINE
Get our low price in quantities of Orange and Farmers' Associations. Agents wanted. Sample free.
THEO. BURT & SONS, Melrose, Ohio

PENNA. BUREAU OF MARKETS

(Continued from Page 3).

charge of the work Pennsylvania will begin to have the benefits of the nationally standardized grain grades.

In order to protect the buyer of original packages of farm products and to systematize and simplify the handling of fruits and vegetables in the wholesale markets of the state this bureau has begun to standardize shipping packages. The U. S. standard barrels, the U. S. standard Climax grape baskets and berry baskets together with the six basket crate and the 32-quart berry crate have been made standard for Pennsylvania. As soon as U. S. standards have been established for round bottom bushel baskets, hampers and splint market baskets these containers, so far as applicable to Pennsylvania conditions will be adopted as standards for this state.

An amendment to Section 6 of the weights and measures law (Act 445 approved July 24, 1913) is now in the Legislature exempting fruits and vegetables packed in original Pennsylvania standard containers from the weight per bushel provisions of the law. This will remove any possible restrictions to the use of standard containers as shipping and sale packages when they are the original packages, and are filled in accordance with good commercial practices.

When grades for farm products are promulgated their enforcement will call for an inspection service. This season in the potato shipping sections a service of certification for grade will be rendered when requested. This is to be in anticipation of an early announcement of the U. S. Potato Grades as standard in the state.

An amendment to the bureau law now in the Legislature will make possible the establishment of a service of certifying to growers, shippers, receivers or railroads the quantity and condition of shipments of farm products within the state. This sort of service has been rendered only by the U. S. Bureau of Markets in Philadelphia and Pittsburgh or interstate shipments.

With so broad a definition of farm product to work on the activities of the bureau have been constructed with the idea paramount of rendering service rather than that of administering regulations.

Every request for service is met with a definite reply by the bureau.—J. C. Gilbert.

CONTROL OF ROSE CHAFER

The rose chaffer is doing much damage to garden crops, corn, beans and similar crops, according to reports being received daily by the Bureau of Plant Industry, Pennsylvania Department of Agriculture. The only remedy is a sweetened poisoned spray.

In one gallon of water put one ounce of powdered arsenate of lead and two or three tablespoonfuls of molasses. When mixing in quantities use two pounds of powdered arsenate of lead in 50 gallons of water and one gallon of cheap molasses. The sweetening must be added to make it attractive.

Old Settler—No, the people of this town are not what they used to be.
New Settler—No, they used to be children.—Foolscup.

Today is a good day to stop grumbling.



Only \$295 Rock Bottom Prices are Here

EVERY home in North America can now afford electricity. The demand for lower prices has been met. Never before in the history of farm light and power have such values been offered. Think of it! A standardized electric light and power plant big enough for light and small power needs for only \$295.

This price is only possible at this time because of intensive effort directed to engineering and production plus a determination on the part of Auto-Lite to meet the farmer

more than fifty-fifty on price reduction NOW. Rock-bottom prices are here.

Willys Light Junior is a smaller plant. In every other respect it measures up to Willys Light in quality. It is air-cooled, has the wonderful Auto-Lite engine generator and standard voltage. Willys Light Junior puts electric light and power within the reach of every one.

600 Watts—32 Volts—80 A. H. Battery, \$295; 160 A. H. Battery, \$365; 240 A. H. Battery, \$435. All prices F. O. B. factory.



Power and Light with
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Now \$525

THIS extraordinary reduction in the price of Willys Light is but further proof of the Auto-Lite ability to produce quality products on a quantity basis.

This famous plant is equipped with the Willys-Knight sleeve-valve engine that improves with use, an exclusive superiority. In addition Willys Light has fifty distinct advantages.

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Cabbage Plants \$1.50 per 1000

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High Grade Agricultural Lime

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A good proposition is open if you are quick. This is a profitable side line if you reach farmers. All correspondence to us.

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Five outdoor grown "Fast-Start" cabbage plants, Greenhead, Ballhead, Succession, Waltham, etc., \$1.25; 1,000, \$2.00; 2,000, \$3.50. Tomato plants same prices. Sweet potato plants, 500, \$1.50; 1,000, \$2.50; 2,000, \$4.00. All plants ready. Well packed, shipped safely.

Available: CASH CUCUMBERS, 500, \$1.50; 1,000, \$2.50; 2,000, \$4.00. 2 bushel bag, \$5.50; 10 lb. bag, \$2.50.

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One valuable economy feature of Beechwood Ranges is their Ventilated Cross-Piece. When your fire gets fairly hot it draws air through this device and burns out the oxygen. You get a much hotter fire, with no more coal.

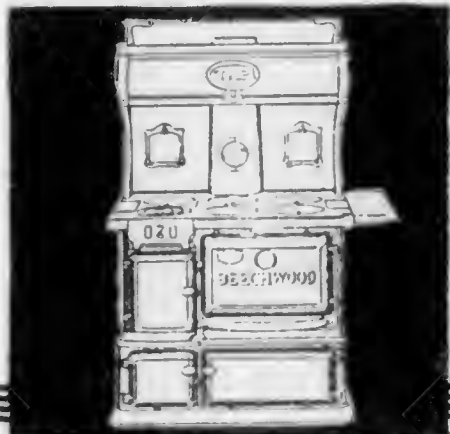
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Rake Separator shown here is a most practical and economical machine for the farmer who does his own threshing. Made in two sizes with capacities from 350 to 600 bushels of wheat a day. Suitable for Gas Engines 7 H. P. and larger.



Our Vibrator with Self Feeder, Wind Stack, etc., is suitable for large crops and merchant threshing. Improvements giving increased separating and cleaning facilities added this year.

We also make a special Thresher for Peas and Beans, and a Peanut Picker. Farquhar Threshers are best operated by Farquhar Steam and Gas Portable and Traction Engines. Illustrated Thresher and Power Catalogue sent free on request.

We also manufacture Sawmills, Potato Diggers, Grain Drills, Hydraulic Presses, etc. Write us concerning your requirements.

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Please Mention Pennsylvania Farmer When Writing to Advertisers



BEST EGGS FOR WATER GLASS

The spring eggs are recommended as the best for preserving in water-glass and that is the season when the farmer is most apt to have a surplus. Every consumer that buys eggs for water-glass preserving is running his own little egg storage plant. A large number of consumers saving eggs in this manner will mean a greater demand for eggs during the present over-supply.

Many farmers can obtain more money for the spring eggs not used for hatching if they are sold in ten and fifteen dozen lots to the kind of customers that appreciate quality eggs.

Infertile eggs are the best and they can be obtained in the spring by fencing the breeders on a separate range and producing infertile eggs from the pullets. Thus reduces the danger of the germs starting to develop if the weather suddenly turns very warm or the eggs remain too long under the laying hens.

The nests must be clean so the eggs will be clean. Washed eggs lose the film which nature places on the shell to retard deterioration. Plenty of oyster shells will usually prevent eggs being laid which have weak shells. Such eggs may crack in the water-glass solution from the pressure of the eggs upon them. Customers who buy fresh eggs in large quantities for preserving are apt to come back every spring for another order. It is surprising how well they keep into the winter with this efficient preservative. It should greatly increase the demand for fresh spring eggs when they are plentiful on the farms.—R. G. K.

CARE OF COLONY HOUSES

The colony house that is never moved loses much of its value. The advantage of the system is in the chance to place the growing poultry on clean ground each year. Two moves a year may be advisable if the ground becomes unclean around the house and there is another location available. We believe that houses should be small enough so they can be moved by one horse. A large house is badly wrenched by frequent moving. The fact that it is large and heavy will be an excuse for leaving it in one place. Six by eight feet is large enough for the farm colony houses used for growing poultry.

The floor of the house soon becomes unclean. As it is a dry floor the accumulation of dirt may not be apparent. But it will be very dusty if the birds do any scratching inside the house and this dust may cause colds. So it pays to clean and spray the houses every few weeks and supply them with clean straw litter. Garden loam thrown in a colony house will absorb the dirt but it will also change to dust at once. This makes the house very unclean and we would never place dust or ashes on the colony house floors because of the dust.

One of the coal tar disinfectants makes a fine spray for the brooder house floor and walls. It will destroy germs and keep down mites and lice. These pests cause a great injury to

growing chickens and with feed at present prices none of it can be wasted in helping to fatten and multiply pests.

Colony houses must be locked each night as a protection from thieves. The birds must be released early in the morning to give them the use of the range during the cool morning hours.—R. G. K.

DUCKLINGS DIE

To Little Girl, "M. F." New Jersey—There is a little louse sometimes found on a duckling's head which can hardly be seen, but in a short time it bores into the brain and causes instant death. Grease the top of their heads with a little lard.—M. M. M., Lycoming Co., Pa.

CARE FOR BROODY HENS

It is a great mistake to neglect setting hens during the "breaking up" period. My experience has been that the hen that has the best care at that time is the hen that begins laying earliest. I shut the hen up as soon as possible after she becomes broody. For this purpose I use a slat coop six feet long, four feet wide and three feet high, with no bottom, so that it can be moved about on the grass as a fresh group of setters are ready for it. This coop accommodates five hens nicely, as they must not be crowded.

Perches are given them to rest on and clean water is kept constantly before them. They are fed regularly and have the best of care.

When treated in this way a hen will often begin laying in three or four days after she has been given her freedom, whereas she can't possibly gain strength enough to lay inside of two or three weeks if she has been confined to a small dark space without either food or drink for several days. I know that I am well repaid for all the extra care I give "old broody" besides I can go to bed with a clear conscience.—E. W. O.

CATCHING POULTRY

A net on a slender pole seems the best method of catching birds that are feeding with the flock. We have also used the crook but find that the birds struggle fiercely when suddenly caught by the leg and it may become lame because of the wrenching. The net is quickly slipped over the body of the bird and while there is much struggling, no part of the bird's body receives an undue strain.

The nets can be made by securely fastening a broom handle to a small barrel hoop. A piece of old fish net or even cloth makes a satisfactory covering. The chicken crooks are made by bending a strong wire in the shape of a crook and fastening to an old broom stick. The end of the wire should be made blunt with a file and turned outward so it will not scratch the scales from a hen's leg when snagged by the crook.

The heavier breeds can be tamed so that they are caught easily. But Leghorns are more flighty and much care and patience is required to handle them.—R. G. K.

The Voice of the People

This department is reserved for use of our readers to discuss problems and matters of general farm interest. Write your views and comments briefly on any question of social, economic or educational importance and thus share them with others. Such articles should not exceed 200 or 300 words. Publication of such articles does not signify editorial endorsement or agreement.

PRICE PREDICTIONS AND PRESENT PRICES

The Governor of Kansas last year advised the farmers of his state to hold their wheat for \$3, which at that time, with new wheat selling up to \$2.80, and the cost of twine and threshing higher than ever, would seem to warrant that price. Last December, the manager of the largest flour mill in this section told a number of farmers at a public meeting that wheat would reach \$2 in February, when the best price that month was only \$1.75, and later he told me it would reach \$2 in March, even after a decline of 25 cents. Later, he said it would go to \$2 in May, giving as a reason the short wheat crop in 1920 as compared with other years.

But with the winter wheat prospects so favorable and with so many men out of work, wheat with other grains fell and it is only \$1.25 at this time.

Sometime in March, a great potato grower in New York state said in an article in a reliable farm paper that with the small stock of potatoes on hand at this time of year, compared with the amount consumed that potatoes would advance.

Since he wrote that article, I have seen potatoes drop from 50 cents to 25 cents per bushel with no buyers at that price, and farmers think they will have to feed potatoes to stock to get rid of them.

I mention these facts to show how figures compiled by officials as to shortages of grain and potatoes are often misleading, and that the opinion and advice of so-called experts are not always safe to follow in selling or holding farm products. I was offered \$2.50 for my wheat in August before it was threshed and could not sell because I could not deliver it immediately as I was unable to get a machine except for three-quarters of a day to thresh some of my seed wheat, and oats for feed in the middle of September, the day before I wanted to seed wheat.

It was not until December that I could get a machine to thresh out the crop and then wheat was selling at \$1.65, and I sold 100 bushels from the machine which I could not store in the granary.

Since then I have sold 100 bushels of wheat at \$1.70, the same amounts at \$1.60, \$1.50 and \$1.25 and have some left. A few farmers sold their crop at \$1.70 in February to a local miller, but there is more wheat and corn held on farms this last week in April than I ever knew in the 27 years I have had wheat to sell.

My practice has been to sell about half of my wheat from the machine in August and hold the other to sell early the following year, and this year only shows that my custom would have been a good one to have followed again, could I have threshed in time. Of the wheat threshed in September, I sold 50 bushels for \$2.45 which I did not need for seed.

To grow good crops of grain is a pleasure, but to know when to sell to get the best prices is a different proposition.—J. N. Glover, Union County, Pa.

WORTHWHILE THINGS

In an editorial not so very far back we read "many worth-while things are not procurable by money or politics." Nothing ever was truer but money is so scarce and so very essential here on the farms that, in our wild scramble for a little of it we forget most of the truly worth-while things, or if we do not completely forget them we are so absorbed in other interests that we pay no attention to them.

When I recall the "good old times before the war" they seem like a very pleasant but very remote dream. Will America ever again know the comparative freedom from care and worry and responsibility that we used to enjoy in those days? The prospect of better times in the near future certainly looks very doubtful and even if we should eventually attain a degree of financial prosperity the shadow of these calamitous times would still remain. I am neither a pessimist or a calamity howler but surely we have little time or opportunity for the worth-while things of life. After all, are not the modern conveniences more or less comparative anyhow? I took my little daughter to a teacher's institute with me and during the week we visited a rich aunt and a well-to-do cousin. At both places they had electric lights, bath rooms, and many things we do not have at home and when I told the child "we are going home tonight" she began to cry. I was astonished because she thinks so much of the people at home and never has been away from them much, but she had become surprisingly attached to the unaccustomed comforts—they were not luxuries, every farmer ought to have them all but, unfortunately, few of us do. Later the girl and I went where there were fewer conveniences than we have and she was so desperately homesick that her dread of going back to the place was almost pitiful.

People talk about the "simple life" but in some ways I don't like too much simplicity. I don't mind eating on a white oilcloth or even on the ground under a tree but I do like a nicely baked cake or pie and an oven that will bake them decently. I don't mind sitting in a kitchen chair but I don't like wind enough in the house to blow me out of it. I don't care in the least for especially fashionable clothes, but I do like enough for comfort, of a quality that will hang together.

Until farming comes into its own; at least, to some extent, and farmers are able to buy the necessities of life we can't hope to have many of the truly "worth-while" things, but we do have enough books, papers, magazines, etc., so that we are not so entirely ignorant and heathenish as most city people picture us. Perhaps when city schools are abandoned and all are centralized in the country our dream of these worth-while things may come true.—E. M. A.

Good habits are not made on birthdays nor Christian character at the New Year. The worship of character is every day life.—M. D. Babcock.



A pipe's a pal packed with P. A.!

Seven days out of every week you'll get real smoke joy and real smoke contentment—if you'll get close up to a jimmie pipe! Buy one and know that for yourself! Packed with cool, delightful, fragrant Prince Albert, a pipe's the greatest treat, the happiest and most appetizing smoke-slant you ever had handed out!

You can chum it with a pipe—and you will—once you know that Prince Albert is free from bite and parch! (Cut out by our exclusive patented process!) Why—every puff of P. A. makes you want two more; every puff hits the bullseye harder and truer than the last! You can't resist such delight at any stage of the game.



Prince Albert is sold in tippy red bags, tidy red tins, handsome pound and half pound tin humidors and in the pound crystal glass humidor with sponge moistener top.

PRINCE ALBERT

the
national
joy
smoke

Settle the Harvesting Question Once for All

THERE are unusual advantages in settling the harvesting problem once for all this year.

There are two things to accomplish if you make a profit in 1921. You must farm economically and you must farm well—that is, get the biggest possible crops from your land at lowest cost.

An E-B Osborne Harvester bought now will help. You can be sure of your harvesting being done right, without loss or waste, not only this year but for many years to come.

Into the E-B Osborne Binder has gone the benefit of 60 years experience. Thousands and thousands are in active use. Their light running, perfect tying and long lasting qualities are known throughout the world. See one on your E-B dealer's floor or write for catalog.

Emerson-Brantingham

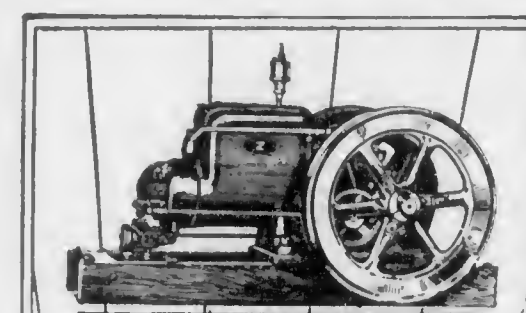
Implement Co., Inc.

Pennsylvania Branch, Harrisburg, Pa.
Established 1852 Rockford, Ill.

A Complete Line of Farm
Machinery Manufactured and Guaranteed
by One Company

Please Mention Pennsylvania Farmer When Writing to Advertisers

What One Gallon of Kerosene in a "Z" Engine Will Do for You



Have your local "Z" dealer tell you about these many big advantages:

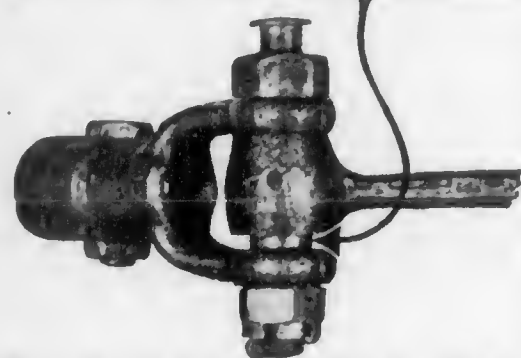
- 1—Economically uses kerosene as well as gasoline.
- 2—High tension magneto eliminates batteries and battery troubles—gives hot spark, quick starting.
- 3—Throttling governor assures steady speed and close speed regulation.
- 4—Suction fuel feed—no pump—simple and positive.
- 5—Convenient speed controller gives change of speed while engine is running.
- 6—Renewable die-cast bearings.
- 7—Positive lubrication.
- 8—Automatic in operation, requiring but little attendance—easily started.
- 9—Fairbanks-Morse quality throughout.



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STOP THAT RATTLE



Standard Special Steel Disks
stop the rattle in your car; stop wear in pins and bushings; add miles to tires by keeping wheels in line. Make car steer like new. 25c Cash or stamps. Standard Machine Works, Findlay, O.



Genuine
GILLETTE
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and 3 Blades
\$1.00
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Aspirin
Then It's Genuine

Unless you see the name "Bayer" on tablets, you are not getting genuine Aspirin prescribed by physicians for 21 years and proved safe by millions. Always say "Bayer." Aspirin is the trade mark of Bayer Manufacture of Monocetate of Salicylic Acid.

TALKS WITH THE BOYS

LETTERS FROM THE BOYS

Dear Editor—I have just finished reading the Boys' Page and hope it will always be our page.

In the April 16th issue, William J. Fryer asked for information about making houses for the raising of pigeons. For quite a few years there were no pigeons around our barn until last spring, a pair was there and hatched their young up on a log in the barn. One morning when the squabs were about 2½ or 3 weeks old, I found the female lying on her back on the barn floor below the window, which they entered to go to their nest and she was dead. I think she forgot herself and flew against the window pane instead of going out the opening at the window and this caused her death. This ended the pigeon business, until this spring when a pair came back again. I have sold one squab that they raised and there is a pair of young squabs out just now.

We have a slate roof on our barn which is not comfortable for pigeons because in the summer it's too hot and in winter it is too cold for them to rest on.

The house I prefer for pigeons is the old way to nail a piece of board between two logs. When we built our barn the carpenters made holes or houses for them. The pair of pigeons I have, used the house I nailed up for them. It is just a box 16 inches long, 14 inches wide and about seven inches high. In the middle of one side is an opening 4 inches wide and 7 inches high.

Here is the one I prefer and it is the easiest one to make. Take a board one foot wide and one long enough to reach from log to log. In some places I have noticed that they nail a board about five yards long up against the logs. This, of course, gives as many houses as there are room for on the board.

This afternoon I was trying to fly a kite. I could get it up real high in the air, but it came down as quickly as it went up. Can anybody give me information to make a kite that will fly?—S. R. Snyder, Lanc. Co., Pa.

Dear Editor—I am 11 years old and live with my parents on a farm of 150 acres. We have 14 steers, 7 horses, 9 Holstein cows and 6 heifers and about 350 chickens. I tend the chickens and help with work. I harrow, mow grass and a lot of other things. I am raising a calf and call him "Billy." We are going to farm about 17 acres of tobacco again this year. I help to work at it until school starts. The school where my sisters and I go is about a mile away. We go to Sunday School every Sunday.

We have two autos, a truck and a touring car. Last year we had over a thousand bushels of potatoes but they did not bring a very fair price. We planted about five acres in potatoes last week. There are no boys' clubs around here, but if there were, I would like to join. I like to read and have a small library started. I have some of Alger's and some of Zane Gray's books.—Jay Harold Eshleman, Lancaster, Pa.

Dear Editor—I live on a farm of 77 acres and am in the sixth grade in school. Mrs. Warner was our

teacher before school closed on April 1.—Kenneth Blaisure, Susquehanna Co., Pa.

Dear Editor—I am fifteen years old and am in the senior class in high school. I received several cards for perfect attendance.

We own two farms, but do not farm them ourselves. I have two sisters in Akron, O., and one brother at home. We have a player piano and a phonograph and we all enjoy the music very much.

My father is a great hunter. This winter he killed ten foxes, ten skunks, six raccoons, and every deer season, he usually kills a big buck.—Carl R. Stoner, Center Co., Pa.

Dear Editor—I am thirteen years old and live on a farm of 70 acres. I am in the eighth grade in school now, and expect to go to high school next year.

We have eleven cows, four horses, ten pigs and a great many chickens. Father gives me money for taking care of the pigs.

We have a gasoline engine which we use for sawing wood and for pumping water to the barn.—Harry Cassel, Dauphin Co., Pa.

Dear Editor—I am nine years old and am in the fifth grade in school. Our farm consists of 100 acres and is situated along a river bank. We have 8 cows, one which I milk, two horses, 50 chickens and two hogs. I do chores, harrow and help to fix the fence.—George Miller, Wyoming Co., Pa.

Dear Editor—I am very much interested in the Boys' Page and wish all boys would be the same and help us out with the boys' letters.

I think a good plan for the boys to take an interest in it, is to start up a club in your home place. I have joined a club called the Willingboro School Garden Club.

I have two teachers, their names are Miss App and Miss Ivins. I like them both very much and like to go to school.—Wm. G. Hunter, Burlington Co., N. J.

Following are the names of some of our boy friends whose letters to us we have thus far been unable to publish. We have enjoyed reading these letters and are sorry that on account of lack of space we have not been able to share them with the readers of the Boys' Page. We hope that we may have more room later. Meanwhile, who is going to write us the best letter about kites so that S. R. Snyder, Lancaster Co., Pa., can build one which will fly as it should? J. W. Havens, Monmouth Co., N. J. Ward Kittle, Bradford Co., Pa. Harry Snyder, care of W. D. Beck (no address).

Lee Wench, Chemung Co., N. Y. Jeremiah Shaeffer, Carroll Co., Md. Clifford Horton, Bradford Co., Pa. G. Emory Gottwals, Caroline Co., Maryland.

Hugh W. Seavers, Dauphin Co., Pa. Francis Remy, Orange Co., N. Y. Chester W. Bennett, Bradford Co., Penna.

Maynard Pipler, Bradford Co., Pa. Paul Musser, Lancaster Co., Pa. Norman C. Miller, Beaver Co., Pa. Walter Stine, Juniata Co., Pa. Raymond Sweet, Bradford Co., Pa. Kenneth Storch, Bradford Co., Pa.

PASSING EVENTS IN PICTURES



- 1—Cardinal Dougherty shown in a new photograph recently made at his home. He will take the place of Cardinal Gibbons.
- 2—This Bassinet on wheels solves many problems for the busy mother and makes a most attractive nursery accessory.
- 3—Two examples of the Paper Suits which the Germans and Austrians wear.
- 4—The Island of Yap which has given rise

to new international difficulties—Japan denies U. S. claim in the Island.

- 5—Photo shows closeup of some of the cars loaded with corn which the farmers of the grain centers of the country have been giving to the starving people of Europe.
- 6—Connie Mack, who feels sure that the Athletics will not be in the cellar this year.

7—Miss Mary Wallace, daughter of Secretary of Agriculture. Miss Wallace is a graduate of Vassar College.

8—A view down the steel hull of the R-38, the giant dirigible, being built for U. S.

9—This photo of the R-38 shows the big gas bags within the steel hull being inflated while the "skin" was being fitted on.

(Photo Copyright by Underwood & Underwood.)

—May 9, 1921.

LANCASTER PRODUCE

—May 7, 1921.

Owing to the cold rains of the past week asparagus was scarce on market this morning and the price jumped from 10 cents

	Beef	Sheep &
	cattle.	lambs. Ho
Totals for week	3237	8638 8
Previous week	2182	8073 9
Calves—2366	as against	3734 previ
week.		
Beef Cattle—The market	ruled	stea

Hay—No. 1 timothy, \$23@23 50; stand-
ard, \$22@22 50; No. 2, \$19@20; No.
\$15@16; No. 1 light clover mixed, \$19@
20; No. 1 clover mixed, \$17.50@18.50; No.
2 clover mixed, \$13@15; No. 1 clover, \$1
@17.

crease of 4 cents per 100 pounds and practically 0.1 cent per quart for each ten per cent increase in test. For surplus quantities the price is 5.1 cents per quart for three per cent milk with an increase of one tenth cent for each tenth per cent increase in test.

OAKS DAIRY FARM, Wyalusing, Pa.
CHOICE LOT OF REG. BIG TYPE Poland China
 pigs, pairs and trios, not skin also bred
R. H. LYLE, CADIZ, OHIO.

LEADING Varieties to offer. Poultry, Eggs,
 Hens, Dozs, Pigeons, Hares, Ferrets, Parrots
 free **BERGEY'S FARM,** TELFORD, PA.

D FOXES Wanted—Wild, healthy, Red
 Foxes Dig them out and

In the second experiment that was reported the object was to determine the comparative profits or losses in fattening the best class of steers and steers of the medium or poor class. There were two lots of six animals each in this test. Steers for Lot 1 were chosen for their good type and apparent fitness for the feed yard. Animals for Lot 2 were selected at

not reached the consumer. One of the obstructions in the path of the farmer is the removal of the road is still out of the way. The conditions are gradually improving. Rates for time loans are lower. Governor Harding of the Federal Reserve Board and his officials are taking interest in the farmer's plight and a permanent investigation in the field is to be made.

C H I C K E N S
10 cents each and up. Eggs, 100, for dead,
Hicks and broilers. Money back for dead
ones as far as Colorado, Texas and Maine.
Free
SANDY KNOLL HATCHERY, C. M.
Lauver, Prop., Box 43, McAllisterville, Pa.

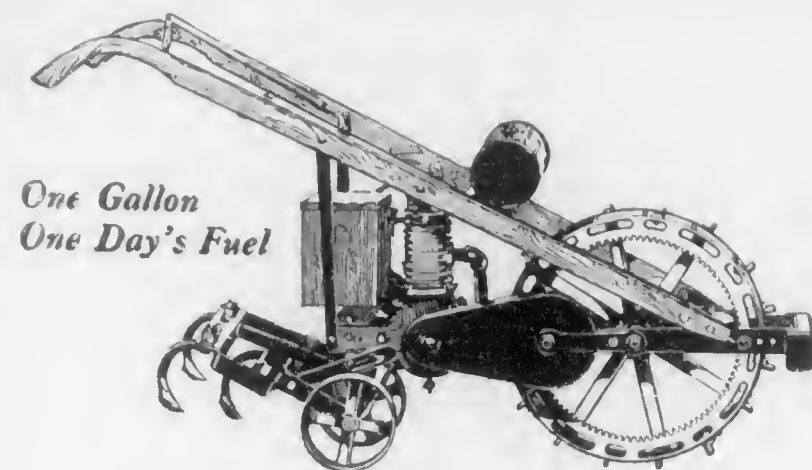
FOR HATCHING **Parks** **pedigree**
Farm raised. Vigorous stock. \$2.50. 15
u. 100, prepaid 15 years a brooder of Har-
puck. **C. W. PRICE**, Harpucktown, N. J.

CHICKS 8 CENTS each and up. Eggs, 100,
Hicks, Rocks, Reds, Minorcas,
and Lehighs. June delivery. 15,000 chicks
free. **Keynote Farm, W. H. Good, Pa.**

for hatching, unrelated stock. White Orpington,
hickens, Pekin duck, Brause Turkey. **Write**

Poultry

S. C. WHITE LEGHORN BABY CHICKS
one of the greatest laying strains in America.
Special price of \$13 per 100, June and July del.
prepaid parcels post
C. P. SHIREY, STEWARTSTOWN



SPRYWHEEL

The \$150 Tractor

F. G. B. Boston, Mass., Crating Extra

Multiplies Man Power by Five from Seedtime to Harvest

Will Your Garden Profits be shaken up or down?

Every dollar you save in the cost of raising crops is a dollar added to your year's income. Every extra bushel you get from using your own time and labor and that of your hired help to better advantage is additional clear profit. Shake your crop cost down, and a shake down in prices will not mean a shake down in profits—whether you operate a half-acre kitchen garden or a hundred-acre truck farm or nursery.

How Sprywheel shakes down crop costs and increases crop profits

Timely and thorough cultivation is the first essential to successful farming and gardening. Farm experiment stations have proved that frequent cultivation right through the growing season is extremely profitable—even when this work is done with hand and wheel hoes. This is work that Sprywheel does at one-fifth the cost. Sprywheel practically eliminates hand hoeing. It isn't a substitute for horses and big tractors. We don't recommend it for everything from breaking new ground to grinding grain, sawing wood and cultivating young lettuce and onions. We can't imagine any one machine that could possibly do all these jobs equally well.

But we do recommend Sprywheel for any work a wheel hoe or a hand hoe can be used for. Hundreds of farmers and market gardeners have proved to their complete satisfaction that one man with a Sprywheel can do more and better work than any five men with hand tools. It "Multiplies man power by five from seedtime to harvest" and keeps crop costs down.

A money maker for the market gardener

A market gardener often cuts down his acreage and spaces the rows wide apart so that most of the cultivating can be done by horse power. Using the Sprywheel he can avoid both these wasteful expedients on high priced, heavily fertilized land. He can plant rows close together and cultivate

every row as often as necessary—simply multiply his yield and his profits. Sprywheel keeps down the weeds, loosens and mixes the soil thoroughly, conserves soil moisture and stimulates rapid growth right up to maturity—long after the plants have grown tall and spread into the rows so that horses and multiple row cultivators can no longer be safely or profitably used.

"You can sure recommend it to your best friends"

Here's a mighty interesting document. We sold Mr. Barnes a Sprywheel last year by mail and never heard from him till we received the letter reprinted below which he wrote to Mr. Brock. It is his report on the Sprywheel without service. Now you get your Sprywheel with the best of dealer service.

Harrison, Ohio, March 8, 1921.

Jerry Brock
Newtown, Ohio.

Dear Sir:

In regard to your letter asking how I like my Sprywheel will say I raised 600 bushels of onions in 1919; labor cost me \$225.00. In 1920 with the Sprywheel I raised 640 bushels on the same acreage; labor cost me \$25.00. Although I put my rows 14 inches apart for the Sprywheel, instead of 12 inches in the old way, you will see my crop was heavier and labor cut \$200.00 on the onions alone. I would not take one thousand dollars for my Sprywheel if I could not get another. You can sure recommend it to your best friends.

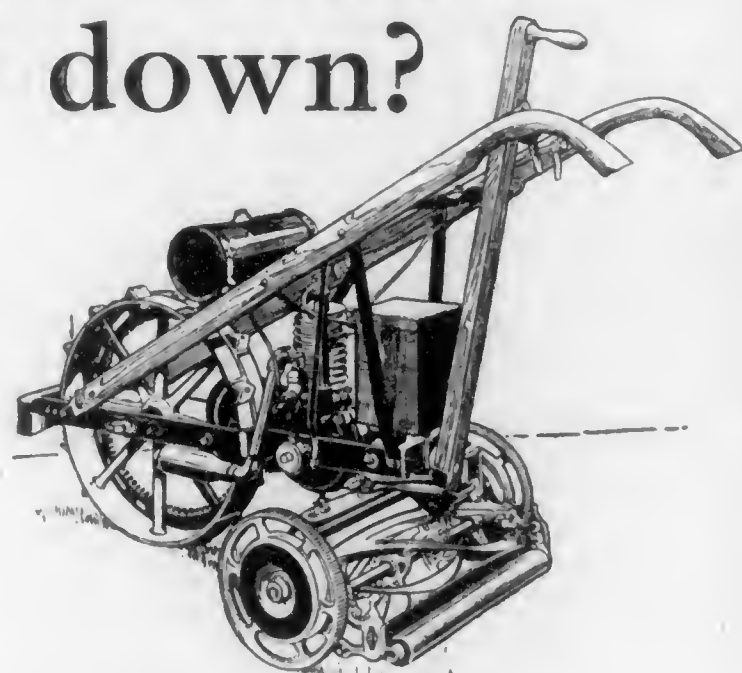
Yours truly,

HUGH BARNES.

P. S. In addition to the above I tended my corn, potatoes, etc. In fact, I didn't have a horse on my place after the plowing in the spring.

Makes home gardening and lawn mowing pleasant work

Besides tools for weeding, mulching, hoeing and hilling, the Sprywheel Lawn Mower Attachment converts Sprywheel into a power lawn mower in less than five minutes. Just loosen



two bolts and drop off the tool assembly. Bolt on the lawn mower attachment and you have a remarkably sturdy, simple and efficient power lawn mower. Equipped with a Sprywheel the home gardener can work a larger garden and keep extensive lawns in presentable condition without hard drudgery—merely an occasional hour of pleasant exercise.

Sprywheel work and cost of operation

Sprywheel pulls sets of rakes, cultivator teeth, right and left hilling chovels, a row sweep or a small plow for running seeding furrows at from 1 1/2 to 4 miles an hour. It enables one man to cultivate 13 miles of single row in a day, considerably more with a two or three row attachment. One gallon of gasoline runs a Sprywheel all day.

Sprywheel's improved fuel economizer

One of the many engineering improvements which Sprywheel embodies is the Sprywheel Slow Speed Plug. It applies a new principle of carburetion—gives greater power at slower speed with a real saving in gasoline consumption. With the slow speed plug you get maximum horse power at 1 1/2 to 2 1/2 miles per hour.

Remove the plug and you get the same horse-power at 3 1/2 to 4 miles an hour—two speeds and no gears. It's a great invention.

Leading implement dealers demonstrate and sell Sprywheel

Sprywheel is sold by authorized Sprywheel agents who are granted exclusive territory. Write to-day for a Sprywheel catalog and the name of the nearest Sprywheel dealer. There is still a little open territory. It will stay open till we find a live dealer. If you are the man we should tie up with, write or wire.

PENNSYLVANIA FARMER

AGRICULTURE
THE KEYSTONE OF
NATIONAL PROSPERITY

ESTABLISHED 1880

PUBLISHED WEEKLY

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Volume 49

PHILADELPHIA, PA., SATURDAY, MAY 21, 1921

Number 21



PENNSYLVANIA DEALERS
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Value of Grinding Grain for Stock

Experiments Show that Animals Make Better Use of Grain When it is Ground

By R. H. MECKLENBORG

MANY experiments have demonstrated that when corn and oats are fed alone, and corn and oats in combination, that 22.8 per cent of the corn passes thru the animal undigested, and 12.1 per cent of the oats; and where oats and corn are fed together, 26.5 per cent is lost. More than 22 bushels of every 100 bushels of corn fed to the animal are not utilized, and twelve bushels of every 100 bushels of oats are lost, and 26 bushels of corn and oats combined. These figures make the loss involved very prominent and should convince the feeder that this loss would represent a very nice profit had he ground the grains.

These tests were made in animals with good teeth and in a healthy condition. If the animal's mouth is tender, or diseased, and the teeth in bad condition, the loss would be still greater. Often, when the animal is taken from grass and given whole corn, the mouth becomes very tender, a condition which prompts the animal to swallow the grains whole. Again, gums become diseased and teeth rotten, a condition which further prevents mastication.

It has been demonstrated that a greater percentage of ground grains is utilized if the grinding is done fine. When the grains are small and cracked, the particles are more liable to be swallowed without the proper mastication; but if finely ground, grinding by the teeth is unnecessary for the food is then in condition to be transformed into a nutrient state by the action of the digestive juices in the stomach and intestines.

The percentage of kaffir corn and milo-maize which pass the animal undigested is even greater than in Indian corn. These grains are small and hard, rendering them difficult of mastication, hence the animal is very apt to swallow a third, and sometimes one-half, in whole state. As a result in feeding kaffir corn and milo-maize it has been found very economical to grind the grains together with a portion of the stalk.

In feeding the dairy cow it has been demonstrated that ground oats and corn combined together with roughages made a gain of approximately 3 pounds more of milk per day with a corresponding increase in butterfat, than where the same amount of whole grain was fed with the same amount of roughages.

With respect to the feeding of steers, it has been found that finely ground corn meal together with other concentrates and roughages made a gain of nearly one-half pound more per day than those fed on the same amount of whole grains, together with an equal amount of concentrates and roughages. Again, in feeding calves it is more economical to grind the grains very fine than to feed whole grain at any time. In fact, from every standpoint, both in securing a better mixture and more complete digestion, it is to the feeder's advantage to grind his grain.

Extensive experiments in feeding alfalfa hay have demonstrated that 75 pounds of finely ground alfalfa will make a gain equal to a 100 pounds of alfalfa not ground. Probably a part of this is due to the fact that there is less loss in feeding the material when ground than in bulk.

Lane, of the New Jersey Station, compared broken ear corn with an equal weight of corn-and-cob meal with the results shown in the table. The table shows the return from the corn-and-cob meal exceed those from ear corn by 9.4 per cent for milk flow and 4.5 per cent in the yield of fat. The returns as accomplished in favor of grinding corn are not materially different from those derived with fattening steers and swine.

Average ration.		Average Daily Yield Per Cow	
		Milk lbs.	Fat lbs.
Lot 1—Ear corn, 6 lbs.; Corn Stover, 10 lbs.; Wheat, bran, 6 lbs.; Hay, 9.4 lbs.	20.2		0.89
Lot 2—Corn-and-cob meal, 6 lbs.; Corn Stover, 10 lbs.; Wheat Bran, 6 lbs.; Hay, 9.4 lbs.	22.1		0.93

Woll of the Wisconsin Station compared ground oats with wheat bran in a feeding trial with four cows lasting 47 days with the results as shown in the following table.

Ground Oats Compared with Wheat Bran		
Average ration.	Milk lbs.	Fat lbs.
Lot 1—Ground oats, 10 lbs.; clover hay, 6 lbs.; corn meal, 2 lbs.; corn stover, without limit.	23.3	1.03
Lot 2—Wheat bran, 10 lbs.; clover hay, 6 lbs.; corn meal, 2 lbs.; corn stover, without limit.	20.8	0.93

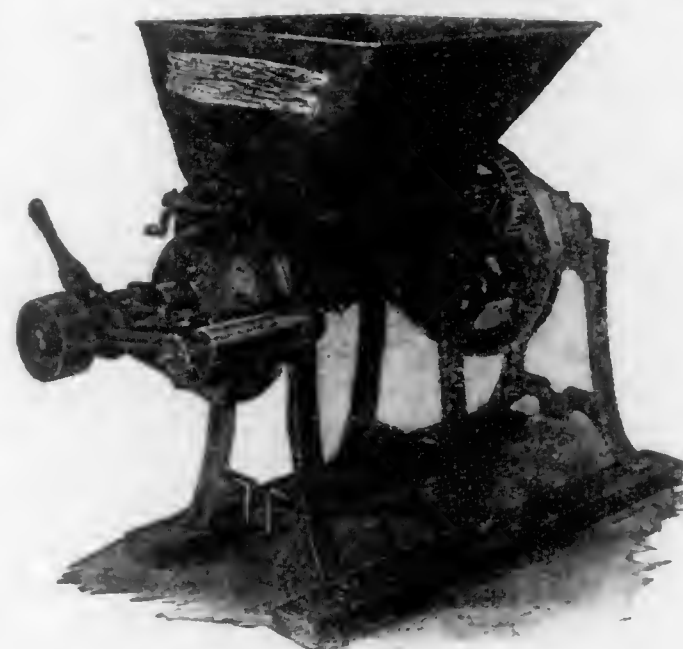
This table shows a return of about 11 per cent more milk and fat from ground oats than from wheat bran. The high feeding value of oats for the dairy cow is well illustrated in this trial.

The following percentages are offered by the Michigan Station to show the average amount of grain left whole when fed to cows:

Corn	Percent	22.8
Oats	Percent	12.1
Corn and oats	Percent	26.5

These figures indicate how profitable it is to grind grain for cows.

At the Wisconsin Station, Henry fed whole and ground oats with corn meal to 115 lb. pigs



A Modern Feed Grinder

for 60 days, with the following results:

Whole Oats Compared With Ground Oats		Aver. Feed for	
		Aver. Daily 100 lbs.	Ration Gain
Feed.		lbs.	lbs.
Whole Oats—Lot 1, 2 1/2 oats,			
1/2 corn meal	2.8	0.68	564
Whole Oats—Lot 2, 1 1/2 oats,			
3/4 corn meal	4.0	0.82	492
Ground Oats—Lot 1, 2 1/2 oats,			
1/2 corn meal	4.4	1.03	429
Ground Oats—Lot 2, 1 1/2 oats,			
3/4 corn meal	5.1	1.27	402

It is observed that the pigs receiving the whole oats ate more feed and produced poorer results than those fed ground oats. The best returns were derived with a ration of one-third ground oats and two-thirds ground corn. With both trials the feed requirements for 100 lbs. of gain were very low where ground oats were used, proving the high value of ground oats when combined with corn.

In the case of horses, it is always advisable, especially if a horse's teeth are poor, or they are over-worked, to grind the oats. Again, ground corn will be found a most desirable grain for the horse. It is a good plan to mix the two feeds; that is, ground oats and ground corn, and not change abruptly from one to the other. With new corn there exists a probability to produce indigestion and often-times colic. It will be found much safer to feed ground ear corn than shelled corn, for the reason that the corn on the cob remains in a better state of preservation and the horse is more apt to thoroughly masticate the grains. Corn being a carbohydrate tends to add fat, especially if the animal is idle.

Barley is also a splendid feed for horses and when mixed with ground wheat gives very good results.

It should be evident to the feeder that it is an unnecessary expense to haul grain to a mill

to be ground when it can be just as satisfactorily ground at home, thereby saving the mill charges, the time and expense of hauling, combined with the advantage of grinding as much or as little feed as necessary and feeding it fresh. A feed mill will pay for itself in a very short time.

There are so many conditions which effect successful grinding of grain that it is necessary for the feeder to exercise considerable good judgment in the purchasing of a feed mill.

Principal among these conditions is the capability of the feed mill to withstand the speed that is a very essential factor in grinding grain. It should be ground. The average feed mill operates at a speed of 500 to 550, whereas, practically all experience shows that a speed approximating 850 RPM will grind grain to better satisfaction. It is true enough that speed as a general rule is not a desirable condition, but the feed mill should be of such construction as will prevent the main shaft and bearing from becoming heated.

The outboard or third bearing is another feature that will play a very important part in the life of the mill. This method of construction will be appreciated where tractors or large stationary engines are used and will prevent bending and other troubles.

A good many feeders are using too short belt. Feed mills consume considerable power and every possible move should be made to assist the engine in transmitting as nearly as possible full rated power. A belt is the transmitter of power, and when a too short one is used the effect is a tight belt, permitting of only about 10 per cent of the pulley surface being lapped, is readily seen that the feeder is in that case using only about 40 to 50 per cent of the rated horsepower of his engine. Whereas, if a larger belt is used, say 50 to 75 feet, the belt will naturally sag and cover a large pulley surface and bring to the mill a greater part of the actual rated horsepower of the engine.

With reference to the pulley, insist upon the mill being equipped with a pulley to produce proper speed. It might not be amiss to repeat here the rule for determining the proper size pulley. Multiply the speed of the engine, or tractor, by the size of the pulley on the engine or tractor and divide this figure by the correct speed of the mill. This result will give the correct size of the pulley.

THE FIRST CULTIVATION

On the effectiveness of the first cultivation the corn crop will depend largely the ease of value of all the subsequent cultivations. If we make the first cultivation thorough, kill the weeds and leave a loose layer of soil on top of the ground we will be well started in growing corn. After the corn has been planted two or three days, or just after it emerges well from the ground, a light harrowing with a spiked harrow, with the teeth set well back, acts as a cultivation, though such a cultivation is not deep or thorough as that which should be done the first time with the riding cultivator.

One of the hardest things to accomplish in cultivation is to keep the weeds down. If we do not get them on the first cultivation they will be much harder to get on the next, and by the time we go over the corn the third time they are big to be cut out by the cultivator shovels so they must be hoed out or pulled, both of which are slow, tedious operations.

Cultivate deep enough to move all the topsoil for at least two inches deep. We can go deeper than that, twice that deep if we can, for there is little or no danger of injuring the young corn roots which are just beginning to feel their way out. A pair of long fenders set next to the rows will admit of very close cultivation so that little weeds right close to the hills will be got rid of. Some farmers whose ground is harder keep rid of weeds go right in with their cultivators as soon as they can see the corn rows in the field. Use the right kind of shovels and keep them sharp. It is difficult to secure proper penetration if they are dull.—J. L. J.

Soils and Fertilizers

Conducted by Dr. J. G. Lipman

Our readers are invited to send us their problems on soils and fertilizers and they will be answered by Dr. Lipman in this column.

IMPROVING A ROUGH FIELD

We have a pasture field on a side hill facing southeast. It is very rocky and untillable. It was badly grown up with brush which I had cut and this was followed by a luxuriant growth of blackberry briars. There is also a large patch of ferns. Can you suggest anything better than spraying for getting rid of these and the briars? If not what spray would you advise? I don't care to burn it over for it is next to the woods and might get beyond control. There is also considerable moss in spots. The field is possibly two acres, but it is very necessary as the tillable acreage is small and not much pasture land. I wrote my dealer about basic slag but he informs me he cannot sell sufficient quantities to permit his handling it, but offers phosphoric acid instead. The presence of moss, I understand, indicates a superabundance of acid already and I am wondering if pulverized lime would not be better. Will you kindly advise me? Anything that is used must be as a top dressing. Could I sow permanent pasture grass seed in the fall or should it be done in the spring? What about nitrate of soda or it that too expensive to be profitable?—Mrs. H. P. C., Pennsylvania.

Among the spray materials that have been used more or less successfully for destroying weeds and other objectionable vegetation mention may be made of fuel oil, arsenite of soda, common salt, sulphate of iron (copperas) and sulphate of copper (blue vitriol). Each has its uses under special conditions, but for your purpose none of these would prove satisfactory. It is obviously not your aim to make the land more or less permanently barren, nor to run the risk of burning your woods, nor to expose your livestock to the danger of poisoning. By cutting the briars and blackberry vines occasionally and by applying suitable kinds and amounts of fertilizers you would encourage the development of nutritious grasses and in time convert the field into a good pasture. The present moderate cost of commercial fertilizer should permit you to improve your land without making too large an investment. A mixture of acid phosphate and steamed bone meal, reinforced with some nitrate of soda, should produce good results. This mixture may be made up of 200 pounds acid phosphate, 300 pounds bone meal and 100 pounds nitrate of soda, or a total of 600 pounds per acre. Under this treatment the pasture will show gradual but steady improvement, and the amount of fertilizer applied could ultimately be reduced to 300-400 pounds per acre. If it is your wish to hasten the entire elimination of the blackberry vines and ferns, the use of burned and slaked lime would be advisable rather than of raw, ground limestone. It would be necessary in that case to apply about 1500 pounds of slaked or hydrated lime per acre. Because of the tendency of the lime to depress the availability of the phosphoric acid in bone meal the fertilizer application should in that case be modified to consist of 400 pounds acid phosphate, 100 pounds bone meal, and 100 pounds of nitrate of soda per acre. After the initial application of lime, the mixture of acid phosphate, bone meal and nitrate of soda, when used annually, should suffice for keeping the land in a reasonably sweet condition. If the land is not too stony and rough for a spike tooth or acme harrow permanent pasture grass seed could be sown with some oats in the spring, or with some winter wheat between August 15th and September first.

Do not refuse the employment which the hour brings you for one more ambitious.—Emerson.

THE CURING OF SICK SOILS

After growing on the same soil for one or more years crops often fail to produce satisfactory yields. It is said in such cases that the soil is sick of that particular crop. Soils are thus designated as being "clover sick," "flax sick," "tobacco sick," etc. In most cases the failure of the crops to produce large yields is due to attacks by fungi or bacteria responsible for specific plant diseases. When any given crop is grown continuously on the same land, the disease organisms will become more common in that locality and may often persist in the soils for weeks, months and years. It should be remembered, of course, that diseases of plants do not always account for so-called soil sickness. Not infrequently crops are seriously injured by the presence on their roots of plant lice. Ell worms are another common cause of injury to plants. They are particularly troublesome where the winters are mild and the soil is not frozen to any considerable depth or for any considerable length of time. These ell worms, or nematodes as they are frequently called, cause very extensive damage to citrus groves in Florida and to many other field and orchard crops. Practically the subject of soil sickness has been studied from many angles. One of the agricultural leaders of Germany stated with a great deal of force about the middle of last century that, if the German farmers could only learn how to grow clover, many of their ills and difficulties would be done away with. Apparently, the failures of clover created serious difficulties for the

tigation. Fruit growers and vegetable growers, as well as general farmers, will benefit from this type of work.

Recognizing the fact that the disease organisms attacking plants may be carried on the seed, cuttings or young plants, intelligent growers try to use in so far as it may be possible clean seed or healthy plants. Well known methods of seed treatment, such as soaking in formaldehyde or corrosive sublimate or the treatment with hot water for a certain length of time, are intended to rid the seed of disease organisms that may adhere to the seed coats. Similarly, in the case of tomato, cabbage, sweet potato and other plants transferred from greenhouse beds or cold frames into the open field, certain diseases may be carried on the young plants. By suitably treating the soil and seed beds much can be done toward protecting the crop against infection in the early stages of growth.

Very often seed or plant treatment is not sufficient to protect the crop against plant diseases. The disease organisms may survive in the soil and, under such conditions, nothing save soil sterilization or some other form of soil treatment that would destroy the disease organisms can give satisfactory protection to the crop. A few years ago, when methods of soil sterilization were not as well understood as they are today, crop rotations seemed to be the most promising means for reducing losses caused by plant diseases. It was known that potatoes would be relatively free from scab when grown only once in five or six years, or that one good catch of clover was reasonably certain in every six or seven years. In the case of some crops longer intervals seemed to be desirable as, for instance, in the growing of sainfoin on the chalk soils of England or France. The belief seems to be correct among the farmers of Wiltshire in England that sainfoin should not be grown more often than once in fifteen or twenty years on the same land.

Instead of waiting for the gradual starving out of disease organisms or injurious insects by means of crop rotations, methods are now available for ridding the land of these enemies quite promptly and effectively. The use of steam or of hot water for the partial sterilization of greenhouse soils is not new. The use of chemicals for the same purpose is, however, more recent. Among the chemicals that have been successfully employed for this purpose mention may be made of formaldehyde, carbon bisulfide and toluene. Recent experiments in France seem to indicate that sulfide of lime used alone or in combination with certain coal tar products may be a cheap as well as an effective means for restoring sick soils. Among the coal tar products liquid carbolic acid and related compounds have, in an experimental way, given satisfactory results. It is probable also that sulfur will prove a suitable remedy for many fungous pests.

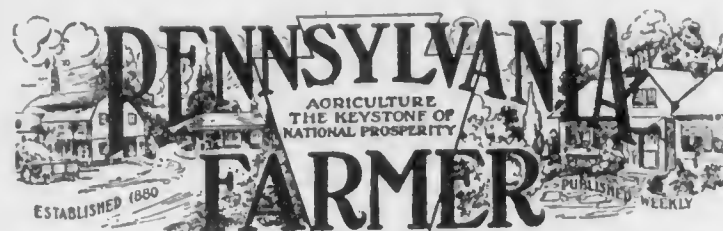
The entire subject of soil sterilization by means of chemicals is new, but the results already obtained are full of promise. The chemicals that would prove serviceable for this purpose should preferably remain in the soil for a short time only. Materials like formaldehyde or carbon bisulfide readily escape from the soil as gases. Materials like sulfur, used for controlling the potato scab, do not escape from the soil, but the effect produced by them can be neutralized by the use of lime. From what has been said above, it is, therefore, evident that so-called sick soils may be restored to their full productivity by the use of either heat or chemicals. At present this is practicable only on a small scale, as in the case of garden or greenhouse soils; or on a field scale, as in the case of the treatment for potato scab. Recent investigations have given us reasonable assurance that the methods of treatment will be improved and the cost of the chemicals themselves reduced to a point where soil sickness will be dealt with chemically on a field scale.—J. G. Lipman.



The Beginning of "The King of Crops"

European farmer seventy-five or one hundred years ago. The same experience has come to the farmers in the United States. Indeed, clover sickness or clover failure has been responsible for much of the depletion in the soil fertility of the older sections of the United States.

In dealing with the subject of soil sickness, or more properly speaking, crop sickness, two methods naturally suggest themselves as offering some measure of relief. It is well known that plants vary in their ability to resist disease. Some varieties are more resistant than others. Thus we have types of flax that are fairly resistant to flax wilt or cow peas resistant to the disease known as cowpea wilt; of potatoes resistant to attacks by the potato scab fungus, or varieties of clover relatively resistant to one of the several fungous diseases which interfere with the normal growth of the clover plants. The resistance to any given disease may be still further increased by selection and breeding. Hence, the plant pathologists and plant breeders are much interested in the subject of disease resistance and the methods for increasing such resistance. The work already accomplished in this field is very encouraging. One need only mention, in passing, the success that has attended the efforts of Professor Bain of the University of Tennessee in developing resistant types of clover or the efforts of Dr. Bolley in Dakota in developing resistant types of flax. The coming decade or two will see much helpful development in this field of inves-



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OUR JOB is to serve our readers. Whenever you are puzzled, write to us and we will help you if we can.
—The Editors

Those of you are mistaken who may think that there can be an enduring and effective association of the nations for the maintenance of peace so long as those nations are armed to the teeth.
—Maj. Gen. Tasker H. Bliss

Work For Churches

THE WEEKLY Good Word printed at the head of this column is in line with a letter which Major General Tasker H. Bliss wrote to a clergyman in which he said that the "bloodshed of the next war would be upon the heads of church people, because it is possible for the members of religious bodies in this country to force Congress and the administration to call an international council for the purpose of general disarmament. At the present time arrangements are being made by the Allied Church Council to hold a big meeting in Chicago for this purpose. The women's organizations of the nation are planning to present a united demand for universal disarmament. All farmers' organizations are on record in opposition. The whole question is being studied as never before, because, with the immense national debts of the world upon them, people see the folly of the extravagant expenditure which is being planned by the militarists of all nations. No more certain method of engendering the necessary spirit to produce another war can be devised than for the strong nations to enter a competitive armament-building race.

Fleecing The Public

PEOPLE who are dependent upon anthracite coal for their fuel are becoming alarmed over present conditions and the prospects for next winter. The mines are almost idle and 200,000 miners are out of work. In spite of these conditions the mine owners are maintaining higher-than-war-time prices. Instead of lowering prices so as to induce buying as have almost all other producers, the owners of hard coal propose to play the hold-up game still longer with the idea that the approach to cold weather will scare the public so that they will stand and deliver. It is just such high-handed action on the part of monopolies that reluctantly drives the public into demanding government ownership or government control of business. Fuel is one of the essentials of life and if the owners of coal refuse to operate and sell at a price that permits the public to live, the public has a remedy in their government which it will use when it is driven to desperation. Already there is talk in Congress of taking a hand in the production and sale of anthracite. The mine owners would do well not to invite such extreme action, for they would undoubtedly find that their stubbornness was short-sighted. If men really want "less government in business" let them deal fairly with the public.

Sticking to It

"STOCK feeding is not a game for the gambler. The only one who can hope to make money out of it is the person who sticks to it, year after year." Many times that thought was expressed by various speakers at the recent meeting of the Pennsylvania cattle feeders at the Pennsylvania State College. Figures were given to show that while there were years of depression in which cattle were fed at a loss, on the whole the business had been profitable. The men who had been feeding for several years "came out in the end with money ahead but those who "plunged" in years which they thought were going to be prosperous usually lost money.

The lesson which the experienced cattle feeders learned is one which applies very well to almost any line of endeavor and particularly to agricultural work. No great business ever had smooth sailing all the time. The men who are successful now are the ones who hung on during the lean years, not the ones who gave up the first time the tide turned against them.

Build a Silo

PENNSYLVANIA has over 202,000 farms. The latest available figures show there are 43,657 silos in the state, or only one for every five farms. A map prepared in this office showing the distribution shows that the vast majority are located in the counties of the Northeast, the Southeast and the Northwest. As might be expected these are the sections in which dairying is conducted most extensively. It is also worth noting that the sections in which silos abound are the most prosperous agriculturally. Bradford County leads the list with 3,203 silos; 55 per cent of the farms are equipped with them. Tioga County has 2,833 on 65 per cent of the farms. The percentages in different counties vary down to 3 per cent in Snyder, 4 per cent in Green, 5 per cent in Fulton, etc. The point we wish to emphasize is that there are many good agricultural counties in the state which are not sufficiently equipped with silos for most profitable stock raising. In some places the value of ensilage for ruminant animals other than milk cows is not fully realized. The cattle feeding experiments at State College show that silage is absolutely essential to most economical feeding. The experiments at Purdue University showed that silage-fed cattle produced beef at a saving of \$4 per hundredweight over those not fed silage.

A general farm on which stock is kept is not fully equipped if it does not have one or more silos. The progress of time makes it increasingly necessary for farmers to adopt such measures and equipment as will enable them to turn out their products at the least possible cost. This includes everything that will save labor and conserve crops. Among these things the silo stands pre-eminent.

The Dependable Farmer

WHEN the war broke out and it was seen that this country would be involved, the wisecracks at once began to tremble in the fear that the farmers would not be able to uphold their end of the job. They were firm in the belief that farmers as a class were woefully inefficient; they had always heard it said that such was the case. Farmers buckled down to it and proved again the truth of the old saying that all men are liars. The war ended and found farmers in possession of bumper crops of every kind—crops which had been produced at extreme cost. What happened to the prices was similar to what occurs when you stick a pin into a toy balloon. Farmers were left flat with war-time production costs to pay. Again, dire results were prophesied. Farmers could not, or would not, go on and starvation faced the nation. Again, the false prophets had to eat their words. Patiently and with grim determination farmers hitched up their belts a notch and went to work to produce another crop. They simply reduced their expenditures to meet their incomes and are fulfilling the Divine promise to the race that "Seedtime and harvest shall not fail." Reports indicate about the usual acreage and a normal condition and, whether in full justice or not, bread will continue to be furnished.

All this should convince the critics and doubting Thomases that agriculture is not only the

most essential, but is also the most efficient, the most dependable and the most adaptable industry in the world. Not only is the farmer maintaining normal production at a time when others are afraid and idle, but he has choked back his anger at unfair treatment and begins the payment of his debts. His money and credit is the balance wheel which is carrying the motion of the business machinery past the dead-center, thus preventing a complete stagnation. When these facts once filter into the minds of Congressmen and are acknowledged by the consuming public there should be no difficulty in having such legislation passed as will make the life of the farmer easier and his business more stable.

Our Washington Letter

The emergency tariff bill passed the Senate practically as it was reported from the Finance Committee, by a vote of 63 to 23. Several Southern Senators supported the measure. Amendment after amendment asking for protection on about everything from eggs to airplanes, was proposed and promptly voted down. An especially powerful effort was made to have hides and sheep pelts included in a tariff schedule and farming implements and fertilizers left on the free list, but without avail. Senator Penrose, who had charge of the bill, told the backers of the various amendments "these matters may be corrected at the day of judgment but cannot be corrected in the Senate at this time."

Whether this emergency tariff will benefit the farmers is problematical. It continues in force only six months. During that time it may tend to strengthen the price of wool and dairy products. Other farm products, such as potatoes and grain, will not be on the market in large quantities until the six months expire.

With a desire to increase the farmer influence on the Federal Reserve Board, Senator Arthur Capper, of Kansas has proposed a bill to enlarge the membership of that body to nine by adding as members the secretaries of agriculture and commerce. House and Senate conferees on the immigration bill, which limits the number of aliens who can enter this country during the next year to three per cent of the foreigners from any particular country already registered here, have agreed to the measure with practically the same restrictions and requirements as the Dillingham bill which was vetoed by former President Wilson.

Brigadier General Charles E. Sawyer, physician to President Harding, in Washington, declared that the establishment of the greatest public health organization that graces the earth, was the aim of the administration in instituting a department of public welfare.

The Tinchin anti-grain gambling bill has been under discussion in Congress for several days, with many substantial arguments presented for its enactment. This bill imposes a tax of 20 cents a bushel on each option for a contract of purchase or sale, such as "privileges," "bids," "offers," "puts and calls," "indemnities" or "ups and downs." It also levies a tax of 20 cents a bushel on each contract of sale for future delivery, except where seller is owner or grower of actual grain covered or either party owner or renter of land on which the same is to be grown, or an association of such owners or growers.

Speaking for his bill Congressman Tinchin said that during the war the trading in futures in grain was prohibited by law, and the market, while there were changes in the price, was what might be called a stable one. The very day that the grain exchanges began to operate what they called the future market and began to gamble in grain that day the fluctuations were manifest, and from that time on until today there probably never in the history of our country was a time when there was the difference between the price of the farmers' product and the price of the consumers' product. There never was a time when there was more vicious fluctuations in the market.

Mr. Tinchin did not claim that his bill would absolutely stop grain speculation, but he did contend that it would stop pure, unadulterated gambling in grain, which in every instance is against the producer and against the consumer, and to the profit of the gambler between.

Indications are plentiful that Congress will not be easily convinced that freight rates ought not to come down for the good of the country. A movement in Congress toward a reduction of freight rates is gathering considerable force. Senator Arthur Capper of Kansas is laying before the Senate a large amount of material showing the necessity for lower rates. The Texas state director of markets is quoted as saying that up to the present time 3000 carloads of perishable vegetables have been lost in Texas because it did not pay to ship them. From the Oklahoma state board of agriculture comes the information that "virtually all our perishable products will rot in the field." Michigan iron mines are threatened with closing down because of the high rates on ore. Six months ago, Senator Capper says, there was a deficiency of half a million freight cars in this country. At the close of April this year there was half a million surplus cars. He contends that all of these unfavorable conditions react upon general business.

HARRISBURG LETTER

More Money Than Ever.—Unless all indications fall the revenue of the State of Pennsylvania for the two-year period commencing June 1 will run higher than ever before and it is now estimated the Governor will be safe in approving appropriations for the record breaking figure of \$118,000,000 to \$120,000,000. Two years ago the Governor approved for something like \$105,000,000 and it is an interesting commentary upon the fact that in this period of readjustment the government of the greatest industrial state is adding a dozen millions to its biennial expenditures and to the taxation sources in half a dozen ways. Not only has there been no diminishing of the financial assistance voted to hospitals and homes not under State control but thus far there has been an effort to increase the number of governmental employees rather than to reduce. The Governor has announced a ten to fifteen per cent reduction over what the Legislature voted, but as the aggregate is the enormous sum of \$136,750,000 that is not so hard to do, especially as the Senate added a dozen millions to what the House had voted. The fact remains that the appropriations will be greater than ever and the income likewise, which will probably develop a policy for the next legislative election.

New Dog License Law.—The new dog license act takes effect on January 15 next so that this year the act of 1917 will be enforced. Already steps are being taken to bring many dogs against people who have not licensed their dogs. The new act will raise more money than people think. Vigorous enforcement will probably result in half a million dollars and less than \$200,000 will go for reimbursement of owners of cattle or poultry and the cost of supplies. The dog owners will also pay ten cents to each county treasurer so that quite a handsome sum will go to the state for various purposes which will have nothing whatsoever to do with dogs or sheep. Incidentally about \$300,000 which used to go to counties will not reach them any longer.

No Cows on Olee.—Under provisions of a new law it will be illegal to print pictures of cows or use names of breeds of dairy cattle on packages of oleomargarine. Hereafter such products must not have any indication that they are other than what they are.

Many Fires.—While there were over 1250 forest fires this spring it is very much to the credit of the state's new fire fighting system that only a few of them got over 1,000 acres in extent. The new system saved the state many thousands of dollars.

Stiffer Cattle Feed Law.—The Governor has approved the Haines bill establishing new definitions for cattle feeds and forbidding use of such materials as hulls, by products of oat meal mills, etc., which have been found in packages lately. The most important result of these actions is that the state can sue and not have to wait every time upon a court trial.

Farmers Can Protect.—Under the terms of the new game code amendments farmers may kill if they see destroying trees, poultry, bee hives, stock or crops not only deer but elk, bear, rabbits, raccoons and black-birds and may follow up such game, but must be in a position to prove material damage and report any kills under such circumstances within forty-eight hours and if one fears bears are bent on damage they may be killed within half a mile of any residence.

NEW YORK LETTER

Farm Paper Sold.—The American Agriculturist has been sold by the Orange Judd Company to E. D. Dewitt, former business manager of the New York Herald. The paper was founded in 1842, and later absorbed the Genesee Farmer which was established in 1831. It was acquired by Orange Judd in 1856.

Two Education Bills Signed.—Governor Miller has signed the Lusk "anti-sedition" bill requiring all public school teachers to subscribe to a loyalty test and another of similar nature making sure that all pri-

vate schools are loyal to our government.

County Fairs.—Eighty town and county fairs of the state paid out premiums last year amounting to \$351,223, and will receive \$250,000 this year towards their support. Twenty-two get the limit of \$4000 aid each, and the rest get in proportion to their premiums.

Health Fair.—For a month two demonstration cars furnished by the New York Central Railroad and equipped by the Cornell department of Home Economics, assisted by the Child Health Organization is touring the New York Central Railroad lines in this state. Thousands of school children are seeing the Health Fair and learning that milk and vegetables are essential to health.

Pastures Threatened.—In Oswego County a European weed, known as leary spurge has become serious as a pest in pastures, meadows and crops. The county farm bureau is putting on ten experiments in eradication of the weed. The plant has been known there some years. It is a perennial and poisonous. Federal agents are inquiring if it has been seen elsewhere. It is 2 feet tall, with a strong, milky central stalk branching at the top with leaves, one to two inches long.

Preparing for National Meeting.—New York Holstein breeders are busy preparing for the big meeting and sale in Syracuse the week of May 31. Tompkins county breeders are fitting five of the forty head this state is allowed to exhibit. Tompkins County boys and girls this week select their calves for junior project work. One of the entrants, Franklin Scudder, won first premium, a calf at the State Fair, which later reacted in a tuberculin test. To replace it he was given two purebred calves, male and female, unrelated, and he is to compete again this year. The State Bankers' Association is giving the juniors great assistance in livestock breeding.

NEW JERSEY NEWS

Big Wheat Crop.—It has been estimated by the United States Department of Agriculture working in cooperation with the New Jersey Department of Agriculture, that this state will yield thru its farms about 2,027,000 bushels of wheat this year, if present weather conditions continue. This amount is an increase of 507,000 over that of 1920, last year's total being 1,520,000 bushels. The average production for the last ten years in New Jersey was 1,557,000 bushels.

State Police Head.—It is expected that Governor Edwards will soon designate the date for the special session of the State Senate for confirmation of an appointment to the position of superintendent of the proposed New Jersey State Constabulary, which will be devoted largely to ferreting out criminals and running them down in the rural sections of the state. There is a general impression that the session will be held some time next month. The constabulary will be in operation on and after July 1, when the legislative appropriation for its work will become effective.

Senator Will Speak.—State Senator William N. Runyon, of Union, will be the principal speaker at the annual field day of the Morris County Board of Agriculture. This event, attended by hundreds of farmers from many sections of New Jersey, will be conducted this year on June 7. The main events of the day are to be held at Brooklawn Farm at Littleton. Preceding the annual meeting of the members of the board and the field day social and other affairs, there will be a tour of several of the large dairy and other farms in Morris County.

Farm Work Advanced.—Spring plowing and sowing in New Jersey has been advanced to a further extent this year than at this period in previous years, according to a crop report issued by the State Department of Agriculture, which added that, of the plowing 75 per cent or more has been completed, while more than 64 per cent of the spring sowing and planting has been taken care of.

Foods in Storage.—Reports show there was an increase in the number of cases of broiler, eggs, pounds of broken eggs, pounds of milk and milk products, edible fats, etc., in cold storage for the month of March.



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Dependable Spark Plugs

THE users of Champion Spark Plugs have really made the reputation of "Champions" for dependability.

They realize that "Champions" are continually giving the highest spark plug value, —the greatest service, —for the least amount of money.

Champion indestructible "3450" insulators, and patented copper asbestos gasket construction, guarantee absolute spark plug dependability.

Over 32,000,000 were sold this past year.



JAS-43 Plug, Price 90¢

For use in high-powered cars, trucks, marine and stationary engines.

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Toledo, Ohio

We Will Accept this Advertisement as Full Payment for

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An Insecticide

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This is our way of introducing Bug Death Aphis to you. We know that remarkable results have been achieved in using Bug Death Aphis. Who should your experience be different? Dues some of your shrubs, plants or vines with it? We member, no Paris Green or Arsenic to work injury in any way.

Send your name and address and that of your local dealer today.

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Also makers of the Non-Arsenical Insecticide,

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Increase Your Profits!

WE will turn your farm products into cash at full market prices for the quality consigned and mail a check at once to you. Our only deductions being transportation charges (unless prepaid) and our selling commissions of 5% on

Eggs, Live and Dressed Poultry, Dried Beans, Butter, Honey, Syrup, Fruits and Vegetables

In carlots or less. Shipping directions—234 Washington Street, New York City. On all country dressed meats, 5% selling charge and shipping directions West Washington Market.

Live Stock, \$1.25 each on cattle; 15c each on lambs, 30c each on calves; 2c on hogs. Shipping directions, New York Stockyards.

Hay and Grain—Write for shipping directions.

Claims for loss or damages will be filed through this office free of charge if desired.

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Your Green Mountain Silo, with the popular hip roof, will never need an apology. It is built to stand up permanently—just as any other farm building is expected to do. Every screw and joint is made to fit tight—both for permanence and silage protection. Every silo is treated in creosote preservative. Hoops are of extra heavy steel with rolled (not cut) threads. They cost us more but they stand unusual strains. Doors fit like a snail—always tight. Wooden ladder runs; no iron to frost the fingers. Green Mountain Anchorage system holds silo absolutely firm and upright. A beautiful silo—with nut-brown side walls and bright red cedar roof. Write today for detailed circulars. Special inducements for early orders.

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345 WEST STREET, RUTLAND, VT.

Will It Stand? YES



A Milker That Milks

without stripping after, without injuring your cows.

Integrate this milker! Buckwater Supply Co. Dept. P. Lancaster, Pa.

PLEASE say: "I saw your adv. in Pennsylvania Farmer."



Dairymen's League Milk Prices

DUE to the innovation of preparations for pooling all sales of milk in New York the May milk price was not announced as early as usual. Many details had to be worked out before dairymen could know what to expect.

The price has been set on three of the four classes into which the League divides all milk. But even so dairymen will not know until the end of the month what their actual receipts will be as the pool levels all prices so each shares alike in the end, with a few necessary differentials of course.

Under the price quotations the usual differentials will prevail—the basic foundation being 3% per cent milk as before.

Something of a precedent has been set in many ways this month. The price at this beginning of the surplus season has advanced on fluid milk from \$2.10 to \$2.30 per cwt. of three per cent milk—due to the pool. Without the pool the early spring and the unequalled market conditions would doubtless have borne the price of fluid milk down to \$1.60 to \$1.80.

the entire level of milk made by these conditions will have its effect on the general price of May milk. Those dairymen who have no other outlet for milk except butter and cheese ought to regard the pool as a fairy godmother and so long as their brothers who produce fluid milk share their returns with them they ought to feel pretty well treated, and ready to be patient with any delays or possible errors in administration while this enormous industry is adjusting itself under wholly new conditions.

Most of the big fluid milk dealers have signed up for May milk at \$2.30 and manufacturers too at the price they are to pay. Supporters of the new plan believe a more steady market will be assured in future as the plan is established.

Better distribution methods and advertising to increase consumption of milk are some of the things expected as the plan grows in detail. Milk is largely under consumed at present from a health standpoint. A few cents from each member of the co-operative organization used regu-



These are some of the Milking Shorthorn Breeders of Bradford County, Pa. There are not many of them but by working together they have made their presence felt. A very successful annual sale is one of the events staged by this live-wire organization

Now dealers are not forced to take all the milk at the top price or fluid milk prices, and so soon they are seeing the advantage in this and are even co-operating to make the pool a success, after the long and bitter fight against it. There is apparently nothing in the advance in wholesale price to increase retail prices, due to removal of the surplus.

The price on Class 2 milk for May is \$2.10. This includes milk made into several products, as plain condensed milk, ice cream and soft cheeses.

Class 3 milk brings \$1.80. This is all milk made into sweetened condensed and powdered milk and into such cheese as Swiss, Limburger, etc.

Class 4 milk prices will not be known until later, and will be such as the market actually returns for milk made into American cheese and into butter.

The outlook on this is not good. In northern counties the price of cheese dropped to 14 cents this week, the lowest in many years. The state stands second in cheese production. Freight rates and the unusual competition of imported butter makes that outlook bad, and so the drag on

larly to advertise milk as a food would do much to correct this, especially as all health organizations are anxious to co-operate in this work. The development of regional manufacturing units will be expensive and necessarily slow but will greatly aid to the efficiency of the new plan.

As one clear thinker puts it in speaking of the pooling system, and of big industries: "There are three main factors involved in the success or failure, principles, methods and men. On only two of these can it really fail. If the principles are wrong failure is a foregone conclusion. If the men in charge are incompetent it can fail. Methods can be changed, and often are." He believes that the principles of pooling are already proven to be right; that problems and vexations in connection with working out the new scheme will arise to tax the patience of members. But the thing to do is to keep the eyes on the development of plants to take care of the surplus products and to remember if methods prove wrong that they can and will be changed. The producers must be tolerant and not demand an overturn of the whole system the minute some-

The clever door-faster is also the famous safety ladder

UNADILLA SILOS

The door frame of the Unadilla Silo gives a continuous opening through which you shove the silage instead of picking it overhead. This saves work. The door fasteners form a convenient, permanent ladder of wide, low "safety" rungs directly under the opening. This gives safety and convenience. Doors open automatically by raising these fasteners.

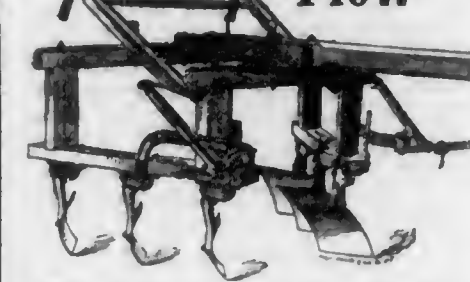
The hoops are all easily adjustable from the ladder. This gives long life to the silo and perfect protection for the silage.

Two Unadillas are purchased in the East for every one silo of any other kind. Get a Unadilla, more money, make your work easy and safe. Write for our catalog giving full particulars. Also for early-order discount and agency offers.

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Unadilla, N. Y.
Des Moines, Ia.



The Improved Riggs Plow



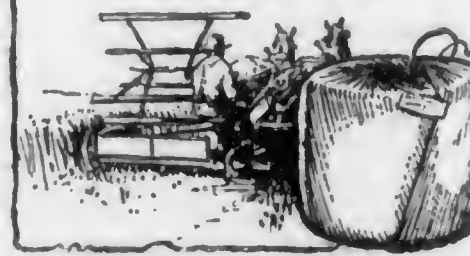
Will kill more weeds and cover more acres of ground in a day than any other plow ever made. Low in price, but up to the mark in quality. Will give many years of satisfactory service, at less than half the cost of a good Riding Cultivator. We also manufacture The Portico Sprayer, and The Improved Riggs 2, 3 and 4 Row Markers. If you cannot buy our goods of your regular dealer, write us for Catalogue and Prices.

THOS. PEPPER, SON & CO.
Box 30, HIGHTSTOWN, N. J.

\$6.00 A BAIL Buy It Direct For Less Money

Hoosier Binder Twine (Standard and Special) available direct in 50 pound bales, \$6.00 F.O.B., Michigan City, Ind., for immediate shipment. Specially tested and weighed and treated for insects. Hoosier Binder Twine leads for combined length, strength and quality. 500 feet to the pound. Write now.

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CRUMB'S IMPROVED STANCHIONS

are guaranteed to please the purchaser. They are shipped subject to trial in the buyer's stable. They are right. Send for booklet.

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BOOK ON DOG DISEASES And How to Feed Mailed free to any address by H. CLAY GLOVER CO., Inc., 118 West 31st Street, New York

Stowells' Evergreen Sugar Corn \$5.00 per bushel. OROL LEDDEN, Sewell, N. J.

thing goes wrong, but consider what the industry would have come to without co-operation.—Dairyman.

OFFICIAL TESTING IN PENNA.

During March of this year there were 739 cows of all breeds on official yearly test on 113 farms in Pennsylvania. There were 176 seven-day official tests recorded in the Advanced Registry office during the month, according to a summary prepared by Paul S. Williams, in charge of advanced registry testing in the state. There were on yearly test during the month 237 Ayrshire cows, 198 Guernseys, 146 Jerseys, 151 Holsteins and 7 Shorthorns. Forty-eight farms reported seven-day official records for Holstein cows during March. There were 44 Holstein cows that made between 20 and 25 pounds of butter in seven days and 15 cows that made from 25 to 30 pounds. Twenty-eight official test supervisors were in charge of the work throughout the state during the month.

There was recently organized in Chester County an association of breeders doing advanced registry testing. The object of the organization is to reduce the cost of doing testing and it is believed that by forming organizations of this kind the cost to the breeders can be very materially cut down. Other men who are interested in associations of this kind should communicate with Paul S. Williams, Department of Dairy Husbandry, State College, Pa.

REDUCED FARES TO HOLSTEIN SALE

Reduced fares to the biggest Holstein sale of the year have been granted by the railroads in certain territories. Breeders coming to the second National Co-operative Sale of the Holstein Friesian Association of America, to be held from May 31st to June 4th, in Syracuse, N. Y., in connection with the annual meeting of the association, will effect a 25 per cent saving.

States included in the reduced fare area are Michigan, Indiana, Ohio, Pennsylvania, West Virginia, Virginia, Maryland, Delaware, New Jersey, New York, and the portion of Illinois bounded on the west by a line drawn from Chicago to St. Louis. Breeders coming from beyond these states can secure reduced fares while within the area.

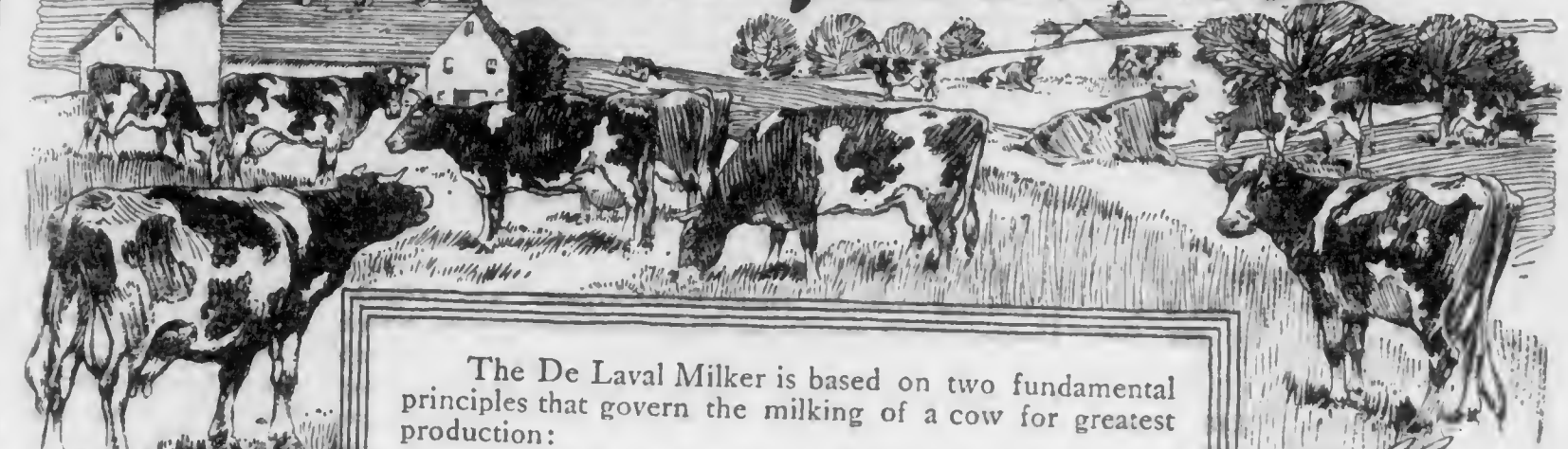
When buying tickets to Syracuse, breeders within the states listed should ask for reduced fare certificates. These will be stamped at the sale and count for one-half the cost of the return ticket. Certificates will not be granted on fares into Syracuse costing less than 67 cents.

Members from beyond the reduced fare section can secure a certificate when entering the territory and the reduction for that part of the trip. Officials of stations not having certificates will furnish information as to where they can be secured. It will necessitate a change in both cases, but will mean a saving.

CAMPAIGNS INCREASE MILK USE

Following a milk-utilization campaign in Spokane, Wash., a survey was made which disclosed the fact that as a result of the campaign 6,000 people had increased their consumption of milk. During the campaign it was found that 2800 school children in Spokane drank no milk, but that during the campaign 2100 started to drink it daily.

Why the De Laval Milker Increases production



The De Laval Milker is based on two fundamental principles that govern the milking of a cow for greatest production:

(1) 85% of a cow's milk is made during milking time.

(2) Unless milking is pleasing to a cow, the greatest amount of milk will not be made.

The organs of a cow which make milk are so sensitive, and the milk is made in such a short time, that the way milking is done greatly influences the production.

The De Laval Milker operates in a manner most pleasing to a cow and therefore the organs which make milk are stimulated to greatest production. Its action is gentle, uniform, cannot be changed, and anyone can operate it. The fact that it usually increases production over hand milking, is the best evidence that it pleases the cow.

The extra milk your cows will give and the saving in time will soon pay for a De Laval Milker. It is a better way of milking. Write for complete information.

The De Laval Separator Company
NEW YORK CHICAGO SAN FRANCISCO
165 Broadway 29 East Madison Street 61 Beale Street

Sooner or later you will use a De Laval Milker or Cream Separator

\$24.95 ON TRIAL
UPWARD
AMERICAN
SEPARATOR

A SOLID PROPOSITION to send new, well made, easy running, perfect skimming separator for \$24.95. Closely skims warm or cold milk. Makes heavy or light cream. Different from pictures, which illustrate larger capacity machines. See our easy plan of Monthly Payments. Bowl a sanitary marvel, easily cleaned. Whether dairy is large or small, write for free catalog and monthly payment plan. Western orders filled from Western points. AMERICAN SEPARATOR CO., Box 3062, Bainbridge, N. Y.

60 DAY SALE
GALLOWAY SEPARATORS

New low prices—special 60 days! On our 21 quality Galloway Sanitary close-skimming Cream Separator. Send direct from factory to you. **\$750 FREE!** \$7.50 off our already low price on 100 separators! This payment, if desired, will cover the cost of the separator. Write today for our Galloway Separator offer and book of large gains with each machine. Secure your money, write at once—while offer lasts. Wm. Galloway Co., Box 133, White, Ind.

GUARANTEED HUBAM CLOVER
ANNUAL WHITE SWEET CLOVER
This is the new clover discovered by Prof. Huchies. All the 1000 tons of seed is cultivated. This seed of an early strain planted in Texas shows Xmas has reached maturity. You can get it in time to raise a crop yet this year. Make big profits growing seed for yourself and neighbors. Order from The Henry Field Seed Co., Shenandoah, Iowa, or direct from THE DEGRAFF FOOD CO., Detroit, Mich.

LIGHTNING RODS
Exclusive agent and sales in Life Dealers selling "DIPPER'S BITEZERS" RODS. Our cover data 60-80% P.U.D. Write for answer. Prices are right. L. L. DODGE CO., Marshfield, Wis.

VEGETABLE PLANTS All kinds grown from selected seed. Get our free trade name. Send for prices. C. E. FIELD, SEWELL, N. J.

PHILADELPHIA WOOD SILOS
With Beveled Doors—Keeps Ensilage Perfect—Easily Operated.
THE OLD RELIABLE CENTURY CEMENT SILOS
Greatest Improvement of the 20th Century—Everlasting.
OPENING ROOFS for Full Silos
ENSILAGE TRUCKS WOOD TANKS
WRITE NOW for New Catalogue and Special Price
E. F. SCHLICHTER COMPANY
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Factory, Norristown, Pa., PHILADELPHIA, Pa.

Dried Beet Pulp
An Inexpensive Milk Producer
Ask your Feed Dealer
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VEGETABLE PLANTS—Cabbage Plants, all kinds, 25c per 1000. Tomato Plants, 25c per 1000. Pepper Plants, 25c per 1000. Cucumber Plants, 25c per 1000. Eggplant Plants, 25c per 1000. J. C. SCHMIDT, BRISTOL, PA.

PLANTS Cabbage, Sweet Potato, Tomato, and other plants. Romance Seed & Plant Farm, Chatsworth, Del.

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THE LARROWE MILLING CO. DETROIT, MICH.

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Are You Going to Spray Your Potatoes with Hydroxide?

The spray with the highest analysis

It costs just as much to spray with an inferior material, why not get the best?

At one operation it will kill potato bugs, repel flea beetle and protect your vines from disease.

We make a full line of Spraying chemicals—Lime Sulphur, Scale Oil, Lead Arsenate, Para-dichlorobenzene, Chemical Lime, Dusting Mixtures, Sulphur (all kinds.)

If your dealer does not carry our line write us direct.

Insecticide Depts., Camden, N. J.
Mechling Bros. Mfg. Co.
CAMDEN, N. J.
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Destroy Smut

Smut decreases yield—every farmer knows this. Those who neglect to cleanse seed with *Formaldehyde* must suffer a needless loss. *Formaldehyde*, the standard seed grain disinfectant, destroys all smut of wheat, grain, barley, rye.

FORMALDEHYDE
"The Farmer's Friend"
Oat Seed Treatment—to each three-gallons of water add one ounce of *Formaldehyde*. With this solution wet every seed by soaking or sprinkling. Then cover for ten hours with sacks dipped in *Formaldehyde* solution. Dry out grain by spreading on clean floor. Stir repeatedly with clean implements. Your dealer has our *Formaldehyde*—one pint treats 40 bushels. Send for new Hand Book.
Perth Amboy Chemical Works
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Use Lime It Pays

Last year it was increased production—this year it's reduced production costs. **PALMER'S LIME** Reduces Costs by correcting acidity at minimum cost—nothing else will do it. Not one farm in ten has enough lime, and this lack of lime reduces the effectiveness of fertilizer and tillage and reduces production which increases production cost.

Palmer Lime is prepared for every use. It will pay you to use it.

Agents wanted everywhere. Write for prices and pamphlets.

Palmer Lime & Cement Co.
Box 37 YORK, PA.

VEGETABLE PLANTS—SPECIAL OFFER
Fine outdoor grown "Produce" cabbage plants, Copenhagen, Ballhead, Succession, Wakenhede, etc., 200, \$1.25; 1,000, \$2.00; postage prepaid. Express 10,000, \$15. Tomato plants same prices. Sweet potato plants, 200, \$1.75; 1,000, \$2.75; 10,000, \$25. All plants ready. Well packed, shipped safely anywhere. CASH PLEASE. Ship by express, 2 bushels for \$2.00, 10 bu. \$20.00.
TIDEWATER PLANT COMPANY, Franklin, Va.

HORTICULTURE

A Successful Orchard

By J. P. STEWART

WE recently had the refreshing experience of visiting an orchard in which the owners were not kicking either about their experience of last season or their prospects for the present season. They have about one hundred sixty acres in tree fruits of various kinds, only about half of which are in bearing, and a considerable part of the bearing portion is only getting started.

The ownership of the orchard is a family affair, consisting of a father, son and son-in-law. It is, however, incorporated, as a company, has a fairly definite division of duties assigned to each of the owners, and pays each a regular salary. In spite of the relatively large development expense which naturally was attached to their operations last year, at the close of the season they found themselves in possession of a net profit of more than \$15,000 after paying all operating costs, liberal salaries, taxes, etc.

This is of course not a big profit for the acreage involved and especially not if it had all been in bearing, but under all the circumstances, we suspect that there are many growers in the country with even larger acreages, who would have been very willing to compromise on the figure named as their share of the net returns for the season of 1920.

As to prospects for 1921, this orchard is fortunate this year in being located well to the northward—close to the Great Lakes in fact—so it has been retarded in blossoming sufficiently to have practically escaped damage from the unprecedented freezes of the present spring. Peaches and sweet cherries, in particular, are about the only fruits that have been hit much, and present indications point to at least a half a crop of the former. Incidentally, the owners are not going to plant any more peaches, according to present intentions, as they are finding them less profitable than apples and some of the plums—particularly the French damson, which seems to do especially well on their place and market.

Why They Have Succeeded

The chief reasons for their success last year, when many others were having rather rough sledding, were apparently in the quality of their product and the market connections they had built up. When the general market was offering less than \$6 a barrel for Jonathans at principal centers less a good stiff freight charge, these men were able to haul their large-sized Jonathans to a good, flourishing railroad center for distribution on the trains, at three dollars a bushel with package returned. Their net returns on this fruit, therefore, were about as much per bushel as most growers were getting per barrel on the same variety, and were even more than the gross returns per barrel from many other varieties.

Incidentally, the Jonathan apple has been doing most famously on this fruit farm. Four acres of 17-year-old Jonathans last year gave a net profit of more than one thou-

sand dollars per acre, when the general conditions were about as bad as anyone cares to see. This, however, was largely accomplished, as already stated, by special marketing arrangements, which returned to the producer a much larger share of the consumer's dollar than has been the case generally.

These men have also been rather liberal in the use of fertilization in their orchards, having used large quantities of nitrate of soda for several years, which has undoubtedly been a large factor in maintaining their steady and constantly increasing yields. They have also followed the mulch system with alfalfa and other legumes to a large extent, in their apples especially, but they do not hesitate to go in with the plow or disc whenever considered desirable or necessary.

HANDLING THE STRAWBERRY CROP

It is one operation to produce a crop of strawberries, then it is another one to harvest it after it reaches maturity. We have tried several methods of handling the berries after being picked in the standard quart boxes. One of which was to let the pickers, after filling the boxes place them, as much as possible, in the shade along the row until perhaps six or eight boxes were filled, then have them gathered up and taken to the packing shed. This not only resulted in a loss of several boxes during the season, both from being careless handling the boxes, causing the berries to be spilled and having boxes upset or stepped on but required considerable time for the picker to be away from the field.

Then we tried letting the pickers stay right in the field and having an extra helper to go from row to row gathering the boxes that each picker filled and at the same time keeping strict account of the number of boxes each one deserved to receive credit for. But for various reasons, such as the expense of the extra helper, the time lost in conversation to each picker as the berries were gathered, etc., this did not, we considered, exactly turn out the way we hoped it might.

The method that we like best is to furnish each picker with a small tray. This tray is very easily made, during the winter perhaps. It can be made quickly and reasonably. We find there is little saved in using second hand lumber of ununiform sizes and description. In preference to such, we use shingle lathe, and mason lathe. The lathes are cut in two pieces 20 and 12 inches long. Two pieces 20 inches long form the sides while two more pieces 12 inches long furnish the ends. This gives an inside measurement of 18x12 inches. Permitting six boxes to be placed in the tray at one time. For the bottom we use mason lathe, which requires two, out of each we can get two pieces 20 inches long, which leaves a piece 8 inches long unused. This we cut in half and use for legs, placing one on each corner. These are put on flush with the top

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of the shingle lathe, which has a width of two inches, insuring us of a substantial place to nail it to. This, of course, leaves a leg extending two inches below the bottom. We make a handle out of a barrel hoop, using one half of a hoop for each trap fastening it at the ends or sides. One can easily see that the cost of the labor and material in constructing one of these trays is at the minimum, and yet returning by their value the maximum amount of efficiency.

As the pickers fill the boxes which by means of the trays can quickly and safely be moved from place to place, they take them to the packing shed and place them on a table. A tray filled with empty boxes is given them and number picked recorded, allowing them to return to the patch immediately.

POULTRY

Management of Chicks After Weaning

When the chicks have reached the age of weaning they have passed thru practically all the dangers of chickhood, and the poultryman can safely count his future flock if only he will continue to give the young birds a reasonable amount of care and attention until they are ready for market or the laying houses. But neglect may undo all the good work of the past weeks. In nearly every neighborhood it is possible to observe instances where large flocks of chicks are hatched in the spring but only a comparatively small number of which ever reach marketable age, simply because the chicks are given no attention after they are weaned and they are, therefore, lost, a few at a time all summer long, until the broods are sadly depleted by fall. Any one agency may claim only a few chicks in a flock, but the combined ones from all causes will frequently be great.

A common cause of loss is to permit various broods, after they have been weaned by the hens or removed from the brooder houses, to desert their coops and roost on fences or in low trees about the poultry yard. It is then impossible to control the young birds during spells of rainy weather, exposure to which is sure to carry off some of the weaker chicks. It is equally bad, however, in those localities where night prowling animals, such as opossums, skunks, minks and weasels, are known to exist, to allow the chicks to continue to use their old coops without their being fastened in each night. The chicks are then easily attacked by the marauding animals, an entire brood sometimes being destroyed in a single night. In such cases the chicks would really be safer from the attacks of the night marauders if they were perched in a tree or on top of a fence.

Chicks outgrow their original coops, of course, and even though a brood of half-grown birds could crowd into its old home, the coop could not safely be closed up tight on a hot night. The only practical way of solving the problem of giving the weaned chicks ample room and at the same time complete protection at night from carnivorous animals is to install them in roomy colony houses. It is unfortunate that colony houses are not more generally employed on the farms of the country. Their use would be the means of saving the lives of many young birds on every farm, the value of which would pay for the construction of the colony houses in just a few years. It is little trouble to

transfer chicks, as soon as they are weaned, to colony houses. By keeping the young birds confined for a day or two, and feeding them regularly in front of their new home after they have been given liberty, they will quickly learn to go in each night. It then requires only a few minutes for the caretaker to fasten all of the colony houses securely, and he thereby always has the chicks under complete control and protection from most dangers at night.

Rats, when hungry, will sometimes seize chicks in the daytime. Where rats or any of the other marauding animals are known to exist, no time should be lost in capturing them, or failing at that, in destroying all possible harbors near the poultry quarters. It is generally possible to rout rats and other small predatory animals by digging after them, for when they know they are being pursued they usually seek new quarters. Hawks and crows are great destroyers of young stock, but seldom attack half-matured birds. They are, as a rule, easily scared away.

The summer range for chicks must provide the young birds with ample protection from the hot sun. Shade is really essential to the health of the growing chicks during the hot months. It keeps them comfortable and growing continuously. It prevents deaths by sunstrokes. If it is not possible for the chicks to range in a grove or orchard, it is necessary to construct wooden or canvas shelters of some kind under which the chicks can seek refuge when the heat becomes oppressive. Some poultry raisers whose yards are devoid of trees plant a patch of corn or sunflowers for the especial purpose of furnishing shade for the chicks and old fowls in hot weather.

When chicks range widely, as they do on most farms, they should also be provided with some protection, in addition to that afforded by the coops or colony houses, from the sudden heavy storms that occur thruout the summer. When storms make their appearance the chicks rarely go into their houses because they are dark, or because the young birds do not reach them in time; as a usual thing they do not make for shelter until the storm is on. Thus many are drowned, especially if they are a pound or less in size. Many such losses can be prevented by constructing large flat shelters of old lumber covered with tar paper to make them waterproof. Set each shelter about a foot off the ground on posts or heavy stakes. Nail it fast to its supports so there will be no danger of the wind moving it. Such shelters should be placed in far corners of the range so the chicks can make for them when a storm comes up, if they haven't time to reach their houses.—W. F. P.

SOME WORK TO RAISE CHICKENS

All things considered, from beginning to ending, hatching and catching and feeding and tending, chasing and killing and scalding and pickin' There's a great deal of work about raising a chicken. Watching the hen while she's doing the hatching. Watching her, too, while she's eating and scratching. Guarding 'gainst hawks and 'possums and rats. Driving off crows and dogs and cats. Ready all day to give something a lickin'.

There's a great deal of work about raising a chicken.
—Lola Sullivan.

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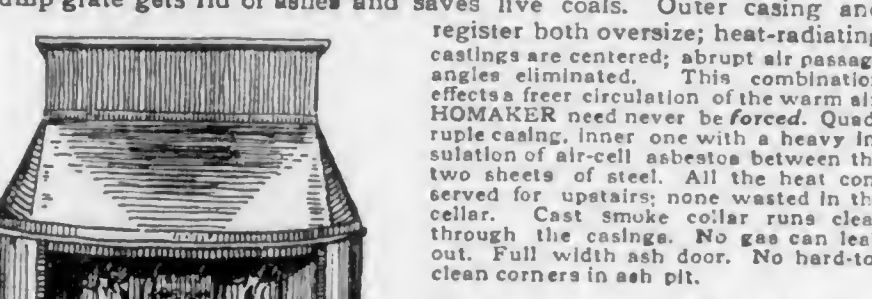
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Of Interest to Farm Women and Girls

When Strawberries Ripen

RIPE sweet strawberries certainly do make sugar and cream taste good. And ordinarily they are good for most people. Being only mildly acid when prime, and containing much the same kind of acid as apples, pears, etc., they are usually very healthful. We pity the unfortunate who cannot eat them without getting a disagreeable prickly rash. Just what causes this in some individuals is not definitely known, except that it is due to some defect in the individual's metabolism (assimilation of food). We have known cases where strawberries ceased to produce this rash and discomfort when the general health was improved by better nutrition obtained by better balance of meals and better living conditions, such as plenty of fresh air at night and other times, proper elimination of body waste each day, etc. It is worth taking some trouble to put oneself into



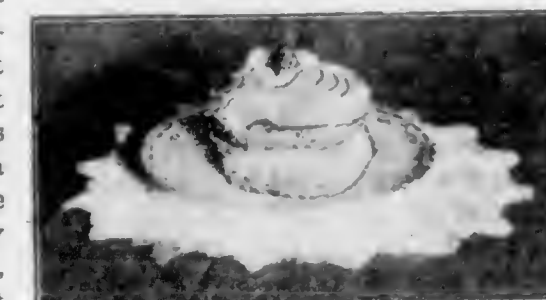
A Tempting Dish of Strawberries and a Plate of Hot Gems

proper physical condition to enjoy the luscious strawberries while they are in season.

Serving the Fresh Berries

A few years ago I spent the strawberry season in Upper Ontario, in a section where everybody, even in the hotels, had the habit of serving the berries crushed and sugared. Everywhere we had them brought to us that way—it did seem such a shame so to mutilate such great fine berries as they grew up there. Fortunately at the farmhouse where I stayed for a time I persuaded them to let me have mine whole, and let me put the sugar over them just as I was about to eat them. I was quite a privileged guest after I proved to the old farmer who ran the strawberry bed that I was really a farm girl, and did actually know how to treat the strawberry plants. I was the only one of the guests whom he would allow to pick the berries, and he came to appreciate my help very much in the height of the season. His was the only strawberry patch for miles up and down the lake, and the people from the hotels used to canoe or sail or motorboat to Gleniffer Braes Farm (of the strawberry patch) for the fresh berries. The patch was back in a clearing in the "bush," with a high rail fence around it to keep the deer from getting at the berries and other "garden gass." I have picked a good many bushels of strawberries in my life, but never in such quaint surroundings nor with such a feeling of privileged importance. Picking strawberries on your own farm is a much more intense job, and quite a bit hotter than up there in the Muskoka wilds in those days.

this 1 1/2 tablespoons butter (or lard) and mix up with 1/2 cup cream, and roll out 1/4-inch thick. Cut into individual rounds like the shortcake illustrated here with a 4-inch diameter cutter, or you can bake it in a flat sheet, then cut square for individual servings. Butter one layer, then lay on top of it another layer of the dough, and bake in a quick oven until slightly brown. Have ready your strawberries slightly sugared, and some of them crushed



Individual Shortcake Surmounted With Whipped Cream Topped With a Big Strawberry

to make a red juice, put them between the layers of biscuit, pile some sweetened whipped cream on top, as illustrated, and dot with a few nice berries. Serve with sweetened crushed berries. Doesn't that make your mouth water?

Jellied Strawberries

Sugar a quart of even-sized berries, but do not crush them. When some juice has run out, drain it off and set away to cool. Dissolve one package of gelatin in a little cold water, and pour 1 pint of boiling water over it. When cool, but not firm, set, beat the stiff white of an egg into it, and add the strawberry juice. Pour this mixture over the sugared berries, and put into a mold and set in a cold place to stiffen. Cut

up in chunks, and serve cold with cream.

Strawberry Charlotte

Line some deep glass sauce dishes with thin slices of sponge cake, fill the inside with sugared whole berries, cover with sweetened whipped cream or with the sweetened stiffly beaten whites of eggs. Put a big strawberry on top of each dish. If possible set where the charlotte will chill before serving.

Good Strawberry Pie

Bake the shell separate to a nice brown. Put the berries into the shell. To 1/2 cup flour add 1/2 cup sugar, and sift over the berries. The flour will take up much of the juice that usually troubles us in baking strawberry pies. Then when the berries have cooked and thickened sufficiently, spread on an egg white meringue, and set back in the oven to brown. Or instead of the meringue, you may prefer to spread whipped cream over the pie.

Nice Way to Can Strawberries

Wash and hull the berries. Pack them quite closely into cans just taken from scalding hot water. Fill the cans with a hot rather thick sugar syrup, put on the rubbers and screw on tightly the can covers (also just taken out of the scalding water), set the cans in your wash boiler, slowly pour in hot water (slowly so as not to break the cans) until the cans are covered an inch or more, put on the boiler cover, and leave the boiler setting on the kitchen floor until the water cools enough to put your hands in and lift out the cans. Do not attempt to screw the covers down any tighter, because thus you will break the seal that the can cover has made by imbedding itself in the soft hot rubber, and then cooling therein. Thus canned strawberries do not shrink nor muss up as when cooked otherwise. They also retain their fresh flavor better.

This is also a good way for canning cherries to retain the fresh fruit flavor. But I like best first to pour some boiling water on the cherries in the can, and let them stand a few minutes, then pour it off before pouring in the syrup and sealing the cans. Thus treated, the hot water takes out the strong taste and makes a much finer flavor for the canned cherries, we think.—Harriet Mason.

PREPARING DANDELION GREENS

In preparing dandelions for the table it is well to pull the clumps apart to be sure that all the dirt is removed. Dandelions that are in blossom may be used with the blossoms and buds but it is well to remove all of the blossoms that are beginning to get old. Wash in plenty of water always removing the greens from the water thus leaving the dirt in the bottom of the pan. After they have been washed until the water is perfectly clear I put them in a kettle of boiling water to which I have added a teaspoonful of soda. I cook them from one-half hour to an hour according to the age of the plants. No matter how old they are, even in midsummer they will be good if cooked in this way. Turn off the first water and add water in which a slice of pork has been cooked, and cook slowly until tender and well done. A large mess will need more than one teaspoonful of soda.—Clarice Raymond.



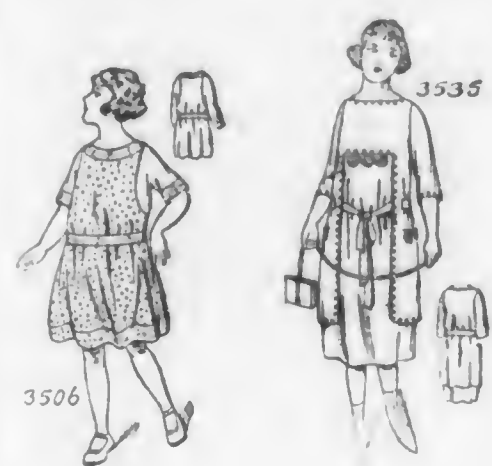
DRESSES FOR LADIES

3498.—An Attractive Gown.—The pattern is cut in 7 sizes: 34, 36, 38, 40, 42, 44 and 46 inches bust measure. A 38 inch size will require 3 1/2 yards of 40-inch material for the dress and 2 1/2 yards of 27-inch material for the guimpe and wash materials are attractive for this design. Braid or bands of embroidery would be pleasing for decoration. One could have a pretty dress in this style of serge and satin. The width of the skirt at the foot is about 2 yards. Pattern, 10 cents.



3559.—Dress for Slender Figures.—It is cut in 3 sizes: 16, 18 and 20 years. An 18-year size will require 4 1/2 yards of 44-inch material. The width of the skirt at the lower edge is 2 yards. Duvetyn, satin, taffeta, linen, voile, ratine and etamine would be attractive for this model. The skirt is joined to an underbody. The sleeve may be finished in wrist or elbow length.—Pattern, 10 cents.

PRETTY DRESSES FOR GIRLS



3506.—Guimpe Style Dress for Girl.—The pattern is cut in 4 sizes: 6, 8, 10 and 12 years. An 8-year size will require 1 1/2 yards of 36-inch material for the guimpe, and 2 1/2 yards for the dress. The guimpe may be of silk, crepe, lawn, batiste or voile; the dress of gingham, chambray, percale, poplin, pongee, rayon, serge or plaid suiting. Pattern, 10 cents.

3535.—A Smart Frock for the Junior.—The pattern is cut in three sizes: 12, 14 and 16 years. A 14-year size will require 6 1/2 yards of 27-inch material. Serge, chambray, taffeta, tricotine, foulard, pongee, shantung, crepe de chine, also gingham and other wash fabrics are attractive for this style. Pattern, 10 cents.

Strong soaps and cleaning powders containing alkali injure linoleum and should never be used on it. Do not eat rhubarb leaves as they contain varying amounts of poison. E. M. A.

READERS' OPINIONS

Liberty Bonds and Taxes

I saw an able article in your editorial in the issue of April 23d, in which you speak of the great amount of taxes to be raised in the United States in the future. We all know who will have the entire burden to carry, if there is a sales tax levied. Now it looks to me that if we would have laws made to prevent the paying of all the interest on all issues of Liberty bonds by Congress passing a resolution making them par dollar for dollar or face value and negotiable it would save millions of dollars interest. When I went to school in the little old red school house, I heard them talk of one dollar saved being worth two earned, and I believe the same old principle will apply to us today. When the Liberty Bonds came due as of the several dates of issue they could be retired in amounts so as not to interfere with the circulation of our regular money and not hurt our interests in the least when the country becomes settled and everything is going right.

Of course there will be great opposition from the big banking interests as they want the Liberty Bonds kept at the present value of from \$86.50 to \$97.50 until the people now holding them are compelled to dispose of them for the real necessities of life, being out of work on account of the present depression.

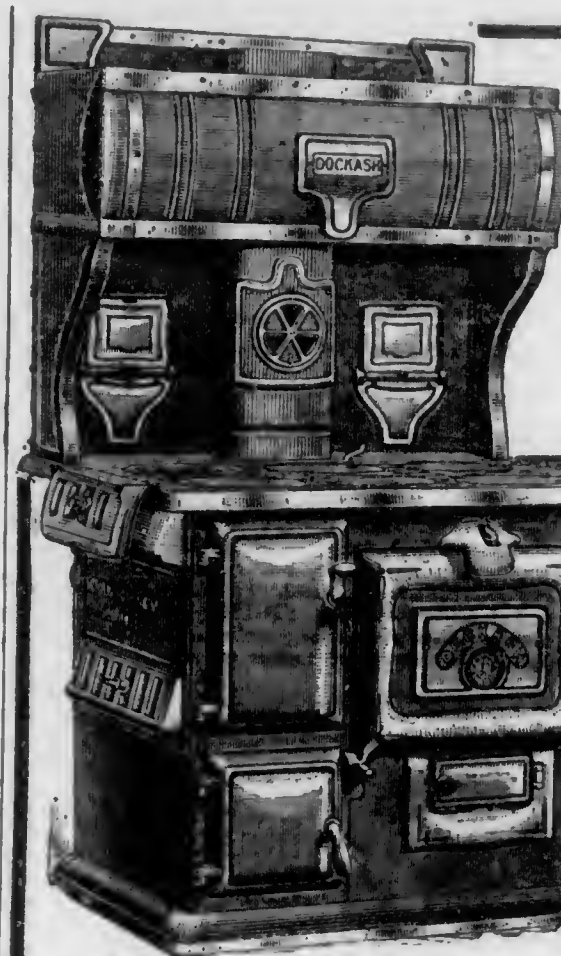
We paid good hard earned money face value for the liberty bonds when we got them and why should we be compelled to sacrifice so many dollars now just when we need them so bad and then have our government come after us to pay interest on same in the way of increased taxes. I think we should write our Representatives and Senators on this question.—J. A. Breth, Clearfield County, Pa.

The Hunting Menace

In our section it is hard to tell which constitutes the greater menace to the farmer, hunters of wild game or of fruit, nuts, etc., but we would consider ourselves fortunate indeed if the latter class would confine their depredations to wild vegetation. Our city vandals think nothing of taking absolutely any fruit they can find. They pick any kind of berries that are accessible from the road, they tear off all tree fruits and destroy the tree in their greediness to fill their big cars as quickly as possible, they have no regard whatever for the ownership of nuts, vegetables, flowers, or anything they find growing anywhere.

If my little daughter wants nuts from our own woods it is never safe to let her go after them alone for a minute—I must leave my work on Saturdays and go with her and, even then, our men hardly consider it safe for us to go during the hunting season and nuts are not ripe at any other time. My own and my neighbor's children greatly enjoy playing in those woods in the summer but every Sunday during the hunting season they are so full of hunters that no one may safely venture into them. We hear their shots before breakfast and they continue all day long.

Yes, organized farmers could do anything to enforce reasonable legislation if they would try. Let us protect ourselves against the armed horde which steals our crops and destroys the security of our homes.—E. M. A.



Now is the Time to install a "Dockash" Steel Range

They are made of Steel (not cast iron) and are built to give lasting service.

Investigate both the practical and economical heating principles of the

"Dockash" Steel Range which is made to cook better than an ordinary range. Being made in both right and left hand

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60c 45x36 inch

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Bed Spreads - \$2.69

\$2.00 Mercerized Hemstitched (2 yds. long)

TABLE CLOTHS—\$1.35

55c Mercerized Lisle (Black and White)

LADIES' STOCKINGS—30c

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100 S. Main St., Easton, Pa., Mich.

"HOMIEWOOL" VIRGIN WOOL

WANTED—50 BEE HIVES

Full Italian Colonies. State lowest cash price.

CHARLES MARSHALL, JAMISON, PA.

Get the sample card of brilliant colored

guaranteed 100% Virgin Wool Yarns Free.

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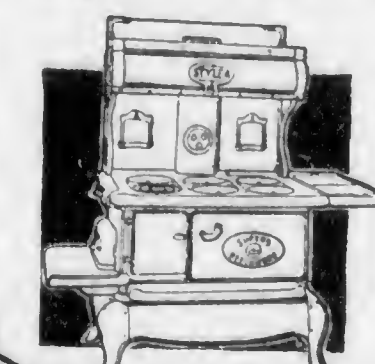
Full Italian Colonies. State lowest cash price.

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Quick meals, better cooked

With one turn of the Beechwood Duplex Grate there's a clear, brisk fire in your Beechwood Range. No waiting for the fire to come up. No coaxing. Your Beechwood is ready to cook without delay.

Beechwood



There's no anxiety about a dish cooking too quickly or too slowly when the dependable Beechwood Drafts are set for a slow or a quick fire. The enameled finish is so easy to clean. No blacking. Three colors, blue, brown or gray.

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The Quakertown Stove Works, Quakertown, Pa.

The Adams Motor Trailer

An efficient, easily-attached motor car trailer of sturdy but light construction; suitable for all-around-use. Light, well balanced and carefully designed, instantly attachable to your motor car by a special easily-fitted coupling device, it will go anywhere your car will go. The basic chassis is well adapted to any form of body design.

Save Money

With the Adams Trailer, you can use the surplus power otherwise wasted in motor car operation, giving added profits in saved time and labor. It is a durable, economical, serviceable, dependable vehicle of very low upkeep, that will pay for itself in a very short time. Capacity 1,200 lbs. You will find it the handiest vehicle in your garage, and indispensable on the farm.

User Representatives Wanted

We want representation in every part of the United States. Write for our special representative's proposition, by which you can buy your trailer at a special discount, become our representative in your locality and build up a profitable business for yourself. Easy to sell. Labor and power saving features seen at a glance. No trouble to demonstrate. Small initial investment. Quick profits. Prices, discounts and full information on request. Write today.

Adams Trailer Corporation
Garden City,
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Specifications

CAPACITY—1500 lbs. LENGTH—from tip to end, 109 inches. LENGTH—full width of body, 84 inches. WIDTH—48 inches. HEIGHT OF BODY—13 inches. WEIGHT—260 lbs. net. CONSTRUCTION—all steel (14 gauge) with drop tail gate. FLOOR—1 inch wood, braced with steel strips. SPRINGS—7 leaf, 1½ inches equipped with grease cups. AXLE—1½ inches. BEARINGS—Vulcan roller. WHEELS—30 x 3½ wheels with Goodyear non-skid tires. ROPEING HOOKS for securing load. HITCH—ball and socket instantaneous. FINISH—black automobile finish with blue paneling. ATTACHMENT for standard makes of cars.

You Can Afford a Farm in Fertile Ontario or Quebec

The wave of high land prices may well turn your attention to the opportunities to be found in these two older Provinces of Canada. Here, close to immense cities—great industrial centers—with all the conveniences to be found in any land anywhere, are farms which may be bought at very reasonable prices. Owners are retiring, independent—in many cases rich. High prices for all farm products, good markets, all the conveniences of old, well-settled districts, beckon you to investigate.

A Wonderland of Opportunity for the Pioneer.

If your means will not permit you to buy an established farm, Ontario and Quebec offer great fertile regions where the pioneer can live out a home for himself and family—where prosperity and independence are to be won by those who will put forth the effort. Every branch of agriculture may be followed in these Provinces; dairying and stock raising are particularly successful.

For illustrated literature, maps, etc., write Department of Immigration, Ottawa, Canada, or

F. A. HARRISON
200 N. Second St., Harrisburg, Pa.
Canadian Government Agent.

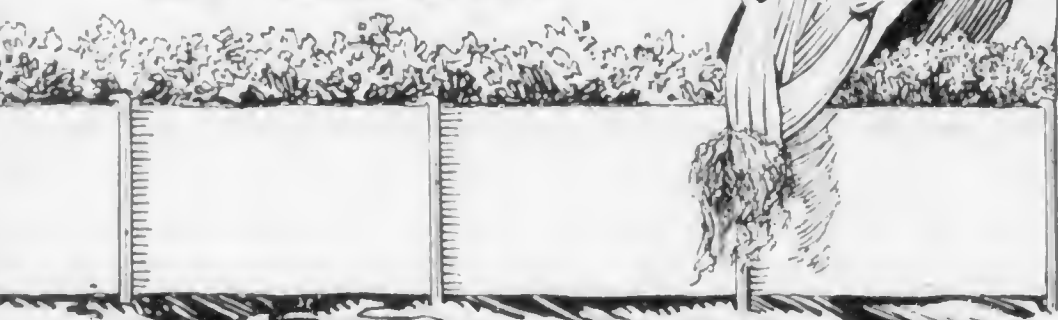
THIS YEAR'S THE TIME!

Sometime, you'll surely use Areanddee Celery Bleacher. Then you'll be sorry that you didn't investigate before, when you realize what profits might have been yours. Areanddee is less than half the cost of boards, yet it lasts five years or more, and does better work.

USE R & D CELERY BLEACHER

Write to us tonight and ask for a sample. It will show you how much easier is the Areanddee way. Two men can apply this new celery bleacher at "high speed"—and not be dead tired when they're through. It's not too early to find out about this money and labor saving method. Write now—we'll send sample and prices.

THE RUSSELLOID COMPANY
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Hardy Cabbage, Tomato, Collard Plants

7 leading varieties, postpaid, 200, \$1.00; 500, \$1.25; 1,000, \$2.25; 5,000, expressed, \$8.00. Sweet Potato Plants, Jersey, Nancy Hall's, 500, \$1.75; 1,000, \$2.75; 10,000, \$27.50 paid.

Franklin, Va.

HAY

W. D. POWER & CO., 601 W. 3d St., New York City, are the largest handlers of commission hay in Greater New York. If you have hay to dispose of contact them with them.

HAY

TALKS WITH THE BOYS

To the Boys:

We have two photographs to live on the page this week. One is a picture of Woodrow Zimmerman, of Millville, New Jersey, who is a reader of the Boys' Page and who is interested in poultry and gardening and the other was sent by Charles Kim, of Indiana Co., Pa. Charles tells about the picture in his letter which is printed below. The boys who write us and ask questions should be sure to give their postoffice address so we can answer them by mail.

THE EDITOR.

LETTERS FROM THE BOYS

Dear Editor—I am a boy 13 years of age and live on a farm of 123 acres. I have three brothers and one sister younger than I am. We have 3 horses, 6 cows, a registered Holstein bull and a Holstein heifer we are raising. We have 6 hogs and 5 little pigs. We have 40 little peeps and 30 old hens. We also have a 6 horse power kerosene engine that we use to grind feed and fill the silo. We just put up a silo last fall and

which is about two-thirds of a mile from my home. We live in the middle of Long Island on a farm of about forty acres. I like to go trapping and fishing but I didn't do much trapping this season because the price of furs was much lower than last season. I caught one skunk a rabbit and a squirrel. I hope this letter will make your page a great success.

Please send me your particulars for collecting subscriptions for the Pennsylvania Farmer.—Peter P. Zakas, Long Island, N. Y.

Dear Editor—I am fourteen years of age and live on a rented farm of 91 acres. I go to Saco to school and am in the seventh grade. I have one brother older than I am. We have thirteen cows, three yearlings, three calves and four horses. I have a pet dog which I call "Sheppie." We also have a horse called "Johnnie" which I ride. We have a gasoline engine and a car. I like to go fishing and there is a pond joined to our farm. Every morning I clean the barn.—Frank Annick, Bradford, Pa.

Dear Editor—I'm on, so let's go! I am eight years of age and live in the country on a small truck farm of six acres. As pets I have chickens, ducks and a dog. I did have a horse, but traded him to daddy for the dog. I call him "Scraper." When we had snow last winter I used to take my sled to school, but as there wasn't much snow, I didn't make much use of a perfectly good sled.

Did you ever go to a country school and did they shoot paper wads when you were a boy? We



Charles Kim's Father and Brothers and Pet Pigs

we think silage is the best feed for cattle. Our barn was struck by lightning last July 30th and we lost all our hay, wheat and rye. We built a new barn, 43x21 but it isn't large enough, so we have started to build a larger one and it takes a lot of hard work.

I do all kinds of work except running the binder and mower and milking cows but my brother can milk and I tend the horses. We have 3 cats and a lamb we are raising on the bottle. These are the pets. We take the Pennsylvania Farmer and think we couldn't get along without it. I like the boys' letters. Inclosed find a picture of my Dad and two youngest brothers, taken two years ago.—Charles J. Kim, Indiana County, Pa.



Woodrow Zimmerman, Age 10

do sometimes, yet only when teacher isn't looking.—Geo. Horrell, Blairsville, Pa.

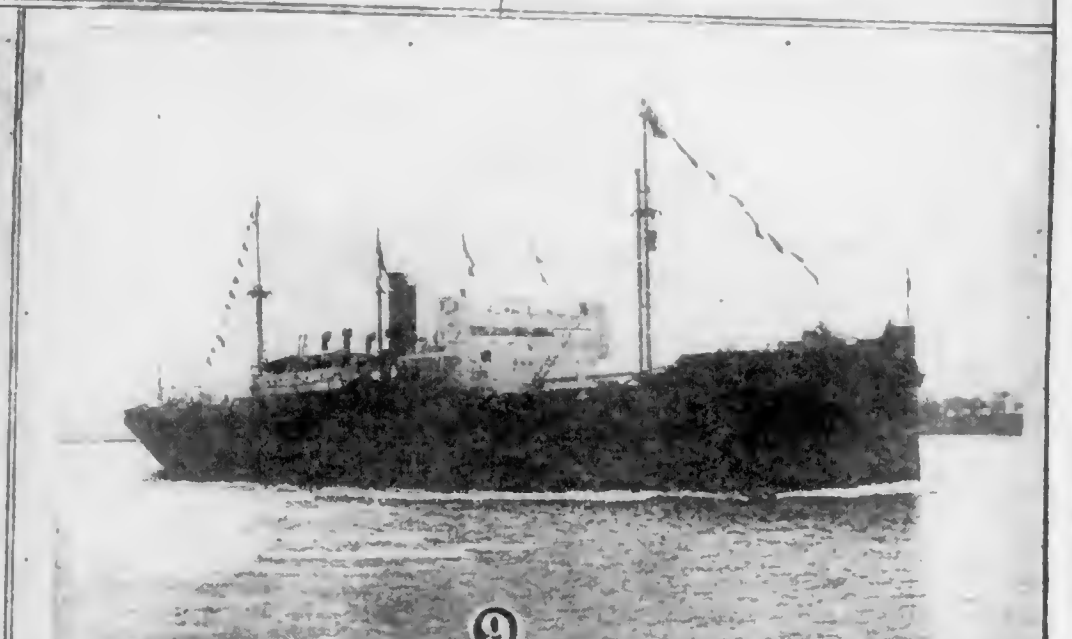
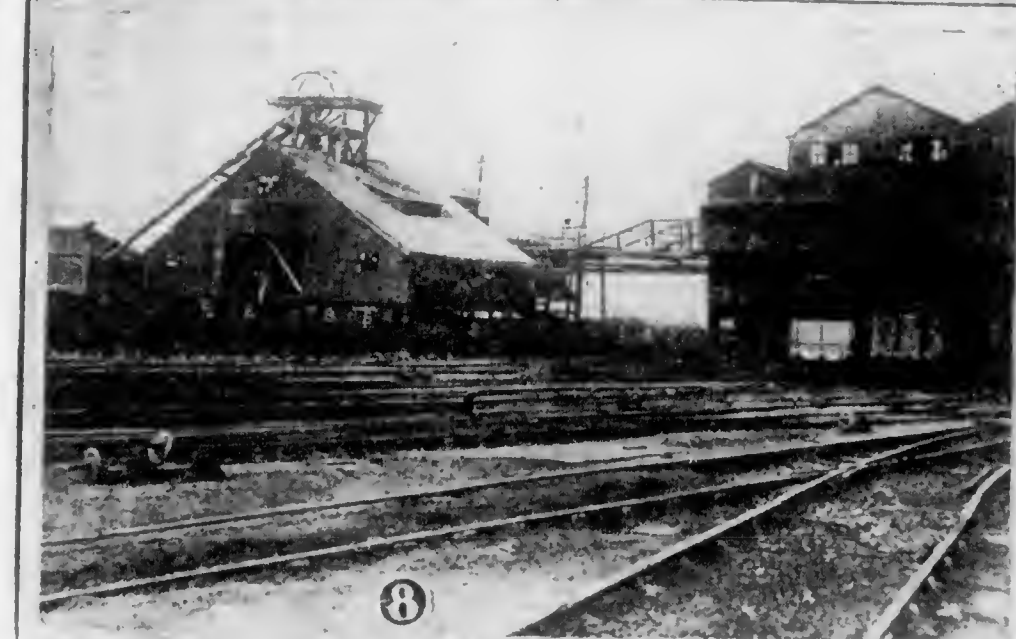
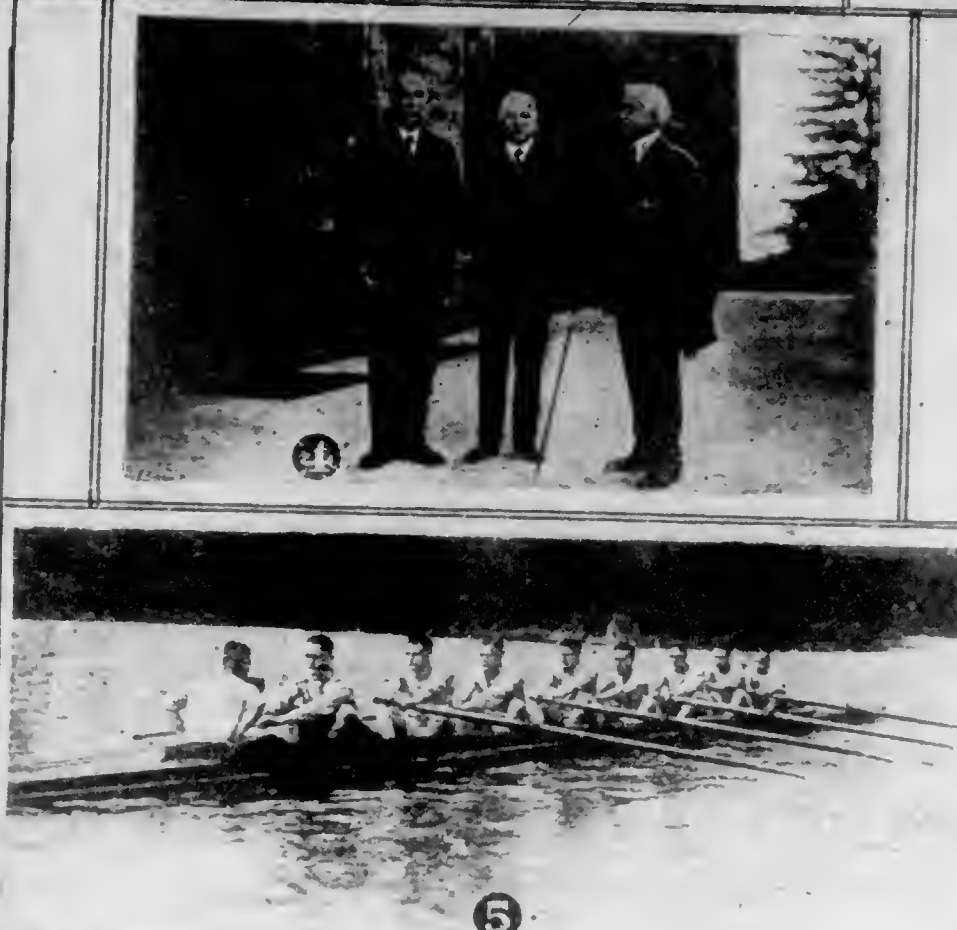
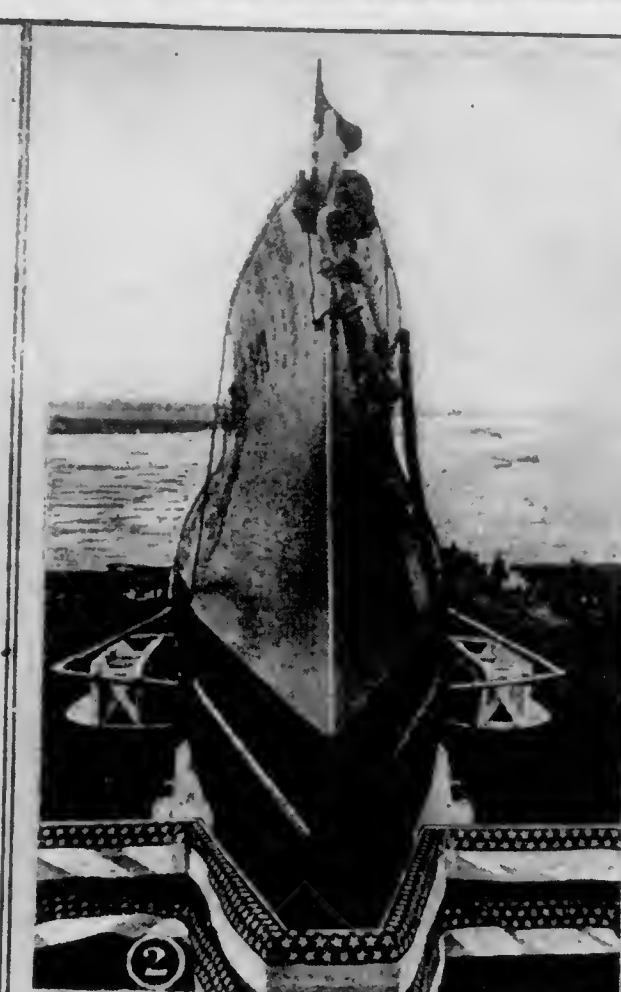
Below are the names of some more of our friends from whom we have received letters.

Ellsworth Noble, Bradford Co., Pa.
Clair Druck, York Co., Pa.
Joseph Pickering, Mercer County, N. J.
Lloyd Esham, Wicomico Co., Md.
Roy Martin, Lancaster, Pa.
R. Everett Moore, Salem County, New Jersey.
Harold Coles Moore, Salem County, New Jersey.
John A. Rarick, Schuylkill County, Pa.
Melvin Baylor, Lycoming Co., Pa.
Stanley Stewart, Sullivan County, New York.
John J. Golden, Wayne Co., Pa.
Frank B. Barr, Bucks Co., Pa.
Merle Randall, Tioga Co., Pa.
Arthur Marsh, Erie Co., Pa.

Dear Editor—I have never written a letter to be published in the Pennsylvania Farmer, but now I have a chance to write one.

I am 14 years old and am in the Seventh and Eighth grade at school

PASSING EVENTS IN PICTURES



1—Eileen Ardon standing on her nose after stumbling over the far hedge of the "Open Ditch" during a race in England.
2—The U. S. S. S-49 which was recently launched by the Lake Torpedo Boat Company, Bridgeport, Ct.
3—Bebe Daniels in her cell at Santa Ana, Cal., where she was placed after being arrested for speeding.

4—Dr. John Martin Thomas, new president of Penna. State College (left) with Judge H. Walton Mitchell, president of the College Trustees (center), and Dr. E. E. Sparks, the retiring president.
5—Photo of Cornell's heavy Freshman Crew.
6—Luther Burbank, 72 years old, the famous "Plant Wizard."

7—Photo of Mrs. Burbank, 26 years old, taken at the Burbank home, Santa Rosa, Cal.
8—The great Pemberton Colliery, near Wigan, England, as it looks today.
9—The Liberty Glo, while carrying a relief cargo for Germany, struck a floating mine which blew the ship in two. On Easter Sunday, 1920, the two halves were hauled into Rotterdam and spliced together.

(Photo. Copyright by Underwood & Underwood.)

The Valley of the Giants

By PETER B. KYNE

Chapter III

Synopsis—John Cardigan, a middle-aged man—a giant in frame and mind—was a pioneer settler along the Pacific coast in Humboldt County, California, in 1850. His business was cutting the giant trees into lumber. His young wife died and was buried among the redwoods in "The Valley of the Giants," as he called the spot which he loved and presented as a shrine to his memory. Bryce, Cardigan's only son, was an intimate friend of his father—who planned that he should inherit the great lumber business which he had built up.

WHEN Bryce Cardigan was about fourteen years old there occurred an important event in his life. In a commendable effort to increase his income he had laid out a small vegetable garden in the rear of his father's house, and here on a Saturday morning, while down on his knees weeding carrots, he chanced to look up and discovered a young lady gazing at him thru the picket fence. She was a few years his junior, and a stranger in Sequoia. Ensnared the following conversation: "Hello, little boy."

"Hello yourself! I ain't a little boy."

She ignored the correction. "What are you doing?"

"Weedin' carrots. Can't you see?"

"What for?"

Bryce, highly incensed at having been designated a little boy by this superior damsel, saw his opportunity to silence her. "Cat's fur for kitten breeches," he retorted—without any evidence of originality, we must confess. Whereat she stung him to the heart with a sweet smile and promptly sang for him this ancient ballad of childhood:

"What are little boys made of?
What are little boys made of?
Snakes and snails,
And puppy dog's tails,
And that's what little boys are made of."

Bryce knew the second verse and shriveled inwardly in anticipation of being informed that little girls are made of sugar and spice and everything nice. Realizing that he had begun something which might not terminate with credit to himself, he hung his head and for the space of several minutes gave all his attention to his crop. And presently the visitor spoke again.

"I like your hair, little boy. It's a pretty red."

That settled the issue between them. To be hailed as little boy was bad enough, but to be reminded of his crowning misfortune was adding insult to injury. He rose and cautiously approached the fence with the intention of pinching the impudent stranger, suddenly and surreptitiously, and sending her away weeping. As his hand crept between the palings on his wicked mission, the little miss looked at him in friendly fashion and queried:

"What's your name?"

Bryce's hand hesitated. "Bryce Cardigan," he answered gruffly.

"I'm Shirley Sumner," she ventured. "Let's be friends."

"When did you come to live in Sequoia?" he demanded.

"I don't live here. I'm just visiting here with my aunt and uncle. We're staying at the hotel, and there's nobody to play with. My aunt's name is Pennington. So's my aunt's. He's out here buying timber, and we live in Michigan. Do you know the capital of Michigan?"

"Of course I do," he answered. "The capital of Michigan is Chicago."

"Chicago?" she asked.

"That's right. It's Chicago."

"I live there—so I guess I ought to know. So there!"

Bryce was vanquished, and an acute sense of his imperfections in matters geographical inclined him to end the argument. "Well, maybe you're right," he admitted grudgingly. "Anyhow, what difference does it make?"

She did not answer. Evidently she was desirous of avoiding an argument if possible. Her gaze wandered past Bryce to where his Indian pony stood with her head out the window of her box-stall contemplating her master.

"Oh, what a dear little horse!" Shirley Sumner exclaimed. "Whose is he?"

"That's a he. It's a she. And she belongs to me."

"Do you ride her?"

"Not very often now. I'm getting too heavy for her. So Dad's bought me a horse that weighs nine hundred pounds. Midget only weighs five hundred." He considered her a moment while she gazed in awe upon this man with two horses. "Can you ride a pony?" he asked, for no reason that he was aware of.

She sighed, shaking her head resignedly. "We haven't any room to keep a pony at our house in Detroit," she explained, and added hopefully: "But I'd love to ride on Midget. I suppose I could learn to ride if somebody taught me how."

He looked at her again. At that period of his existence he was inclined to regard girls as a necessary evil. For some immutable reason they existed, and perforce must be borne with, and it was his hope that he would get thru life and see as little as possible of the exasperating sex. Nevertheless, as Bryce surveyed this winsome miss thru the palings, he was sensible of a sneaking desire to find favor in her eyes—also equally sensible of the fact that the path to that desirable end lay between himself and Midget. He swelled with the importance of one who knows he controls a delicate situation.

"Well, I suppose if you want a ride I'll have to give it to you," he grumbled, "alho I'm mighty busy this morning."

"Oh, I think you're so nice," she declared.

A thrill shot thru him that was akin to pain; with difficulty did he restrain an impulse to dash wildly into the stable and saddle Midget in furious haste. Instead he walked to the barn slowly and with extreme dignity. When he reappeared, he was leading Midget, a little silver-point runt of a Klamath Indian pony, and Moses, a sturdy pinto cayuse from the cattle ranges over in Trinity County. "I'll have to ride with you," he announced. "Can't let a tenderfoot like you go out alone on Midget."

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Bryce was vanquished, and an acute sense of his imperfections in matters geographical inclined him to end the argument. "Well, maybe you're right," he admitted grudgingly. "Anyhow, what difference does it make?"

She did not answer. Evidently she was desirous of avoiding an argument if possible. Her gaze wandered past Bryce to where his Indian pony stood with her head out the window of her box-stall contemplating her master.

"Oh, what a dear little horse!" Shirley Sumner exclaimed. "Whose is he?"

"That's a he. It's a she. And she belongs to me."

"Do you ride her?"

"Not very often now. I'm getting too heavy for her. So Dad's bought me a horse that weighs nine hundred pounds. Midget only weighs five hundred." He considered her a moment while she gazed in awe upon this man with two horses. "Can you ride a pony?" he asked, for no reason that he was aware of.

She sighed, shaking her head resignedly. "We haven't any room to keep a pony at our house in Detroit," she explained, and added hopefully: "But I'd love to ride on Midget. I suppose I could learn to ride if somebody taught me how."

He looked at her again. At that period of his existence he was inclined to regard girls as a necessary evil. For some immutable reason they existed, and perforce must be borne with, and it was his hope that he would get thru life and see as little as possible of the exasperating sex. Nevertheless, as Bryce surveyed this winsome miss thru the palings, he was sensible of a sneaking desire to find favor in her eyes—also equally sensible of the fact that the path to that desirable end lay between himself and Midget. He swelled with the importance of one who knows he controls a delicate situation.

"Well, I suppose if you want a ride I'll have to give it to you," he grumbled, "alho I'm mighty busy this morning."

"Oh, I think you're so nice," she declared.

A thrill shot thru him that was akin to pain; with difficulty did he restrain an impulse to dash wildly into the stable and saddle Midget in furious haste. Instead he walked to the barn slowly and with extreme dignity. When he reappeared, he was leading Midget, a little silver-point runt of a Klamath Indian pony, and Moses, a sturdy pinto cayuse from the cattle ranges over in Trinity County. "I'll have to ride with you," he announced. "Can't let a tenderfoot like you go out alone on Midget."

All adutter with delightful anticipation, the young lady climbed up on the gate and scrambled into the saddle my aunt's. He's out here buying timber, and we live in Michigan. Do you know the capital of Michigan?"

"Of course I do," he answered. "The capital of Michigan is Chicago."

"Chicago?" she asked.

"That's right. It's Chicago."

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100

A Time Saver on the Farm

Last year I had a big patch of ever-bearing strawberries and naturally in the spring there were "about a million" fine runner plants. Now everyone enjoys a reasonable number of choice berry plants but no one wants a million, so I inserted a small ad in our nearest city paper expecting to sell a few to near neighbors perhaps, but the orders came pouring in thick and fast, some even coming from distant states. I wasn't prepared to do an extensive shipping business but I explained the fact to my customers, filled orders to the best of my ability and netted quite a neat little sum. I intended at the time to raise tomato and cabbage plants this year, advertise the whole bunch early, and make a business of selling plants. As it happens, however, I am teaching so I shall do nothing with any of these but hereafter, whenever I am at home and therefore interested in farming operations, I shall advertise every thing I have to sell and I am sure that it will pay well to do so.—E. M. A.

Lackawanna Co., Pa.—There will not be much fruit of any kind in our county, owing to the freezing weather March 28 and 29, and two cold snaps in April with a steady downfall of snow on the 18th. It was an unusual sight to see the trees hanging full of fruit blossoms weighted down with snow. Farm work is going steadily on, plowing, hauling manure, sowing oats and spreading lime besides other spring jobs too numerous to mention, are the tasks that keep us busy. Robins and bluebirds are filling the air with music, young chicks are peeping for feed, piggies are scampering around their pens and enjoying the warm sunny days. Potatoes are selling for 60 cents per bu.; butter 34 cents lb.; eggs, 35 cents doz. Heavy rains have made the newly worked roads a mass of mud.—E. A. K.

Northumberland Co., Pa.—The month started in wet with three days of rain that stopped all work in the ground for awhile. Much of the oats is yet to be sown, and no corn is planted, but a few potatoes are in. The leaves and decayed blossoms are coming out earlier this spring than usual. Grass and winter grain is looking exceedingly good for the open winter it had. Good progress is reported from all road contractors and no trouble getting material or help to push the work along. Shops are still cutting down their forces and running three or four days a week. Wheat is as low as \$1 per bu. at some mills. Corn, 60c; oats, 35c. New potatoes on the market for \$5 per bushel. Butter is selling at 45c pound, and eggs, 24c doz.—M. E. Murray.

A friend is one who makes us be
our best.—Merson.

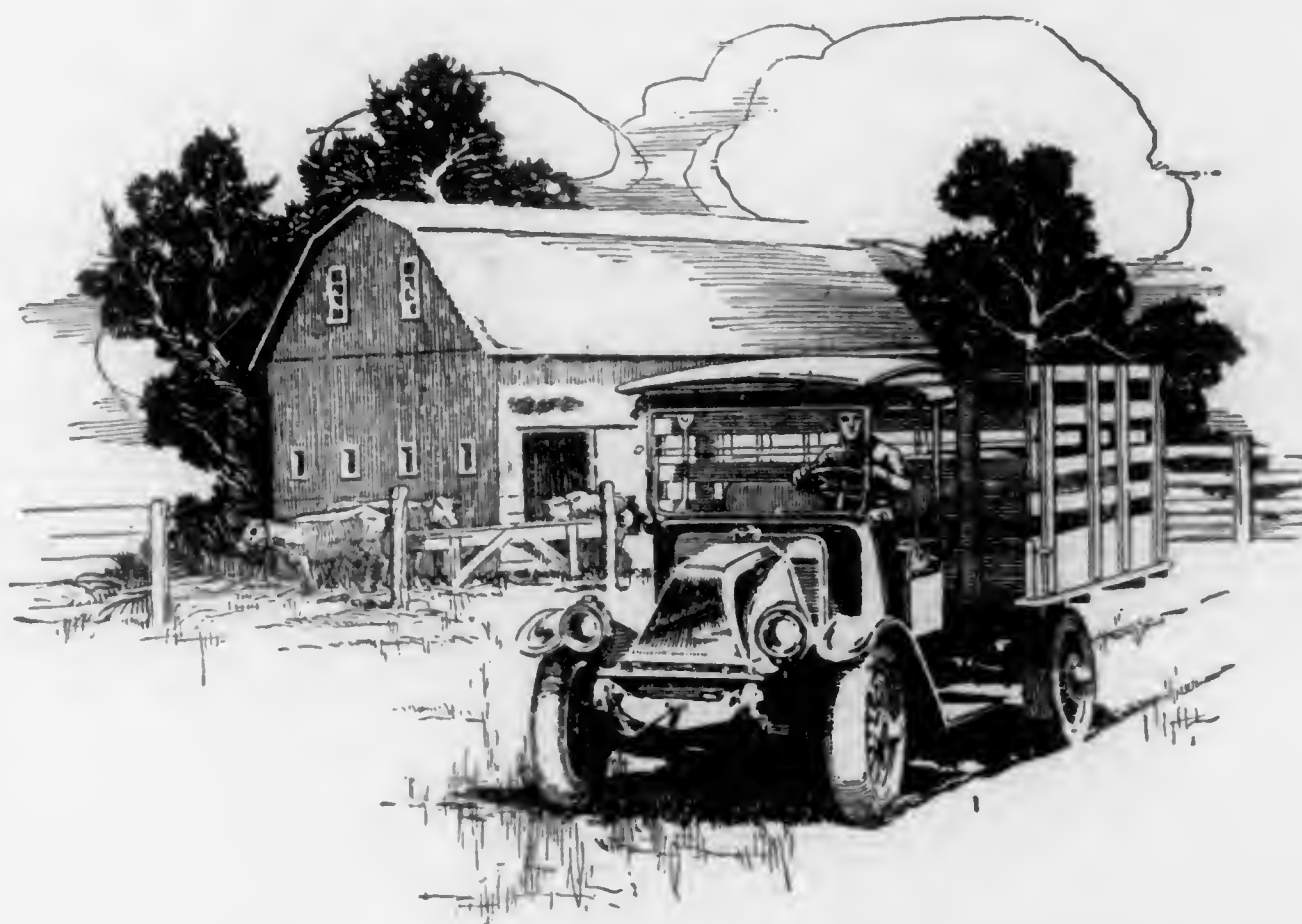
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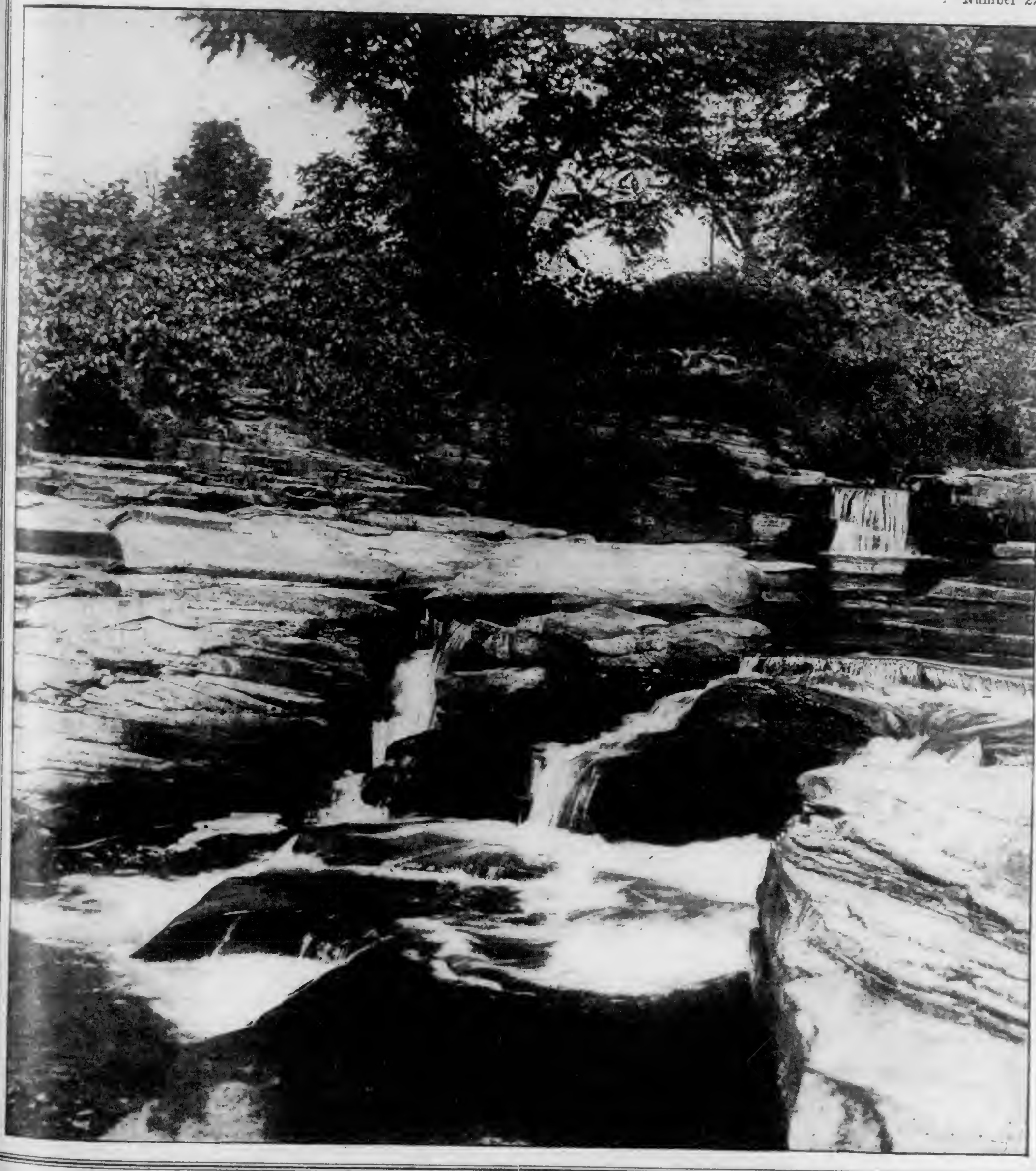
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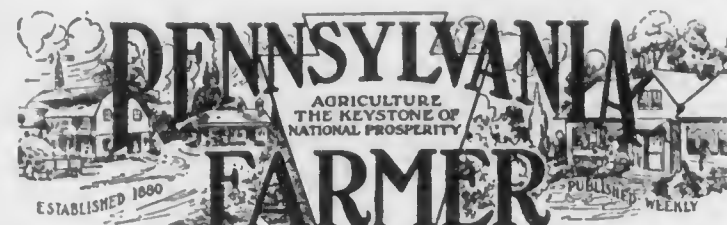
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PHILADELPHIA, PA., MAY 28, 1921
VOLUME 49 NUMBER 22

OUR JOB is to serve our readers. Whenever you are puzzled, write to us and we will help you if we can.
—The Editors

Excess is the arch enemy of success

Prizes for Young Farmers

ON PAGE 12 of this issue will be found an announcement of the activities which are planned for the boys' and girls' club members and other young farmers of Pennsylvania at the Annual Summer Farmers' Week to be held at State College in June. Pennsylvania Farmer believes that the boys' and girls' club and vocational school work is of great benefit to the state's future farmers. In order to promote interest in this work and enable our readers to become more fully acquainted with the results obtained we are offering ten prizes for the best essays dealing with the benefits derived from these activities. Full announcement of rules and conditions will be made in a future issue.

Pennsylvania Farmers Buncoed

IT IS GALLING to all who have the best interests and larger vision of Pennsylvania agriculture at heart to read of the extensive plans which other states are making for their state fairs this year and remember that the plans for establishing a state fair in this state were sidetracked by political log rollers and provincially minded county fair managers. On no other question, with the possible exception of opposition to the daylight-saving bill, has there been such unanimity of opinion as in the demand for the establishment of a state fair. The original bill which provided for the appropriating of \$250,000 was amended so that only \$15,000 is made available for a commission to investigate the project. Thus two years are lost before any really constructive move can be made. However, farmers will do well to accept this make-shift as bona fide intent and make plans to press the matter so strongly two years hence that the Legislature will not dare give a stone when bread is demanded.

Liberal Arts and Agriculture

WHAT is the one great thing that prevents the farmers of the country from taking their proper part in the social and political activities of the United States? It is an acknowledged fact that they make up the most important single group in the whole economic scheme of things, yet they do not have a proportionate influence in the government of the country. They have had great dreams and have made great plans but in most instances these ambitious dreams and altogether worth-while plans have failed to materialize.

Dr. J. M. Thomas, President of the Pennsylv-

Pennsylvania Farmer

May 28, 1921

vania State College, speaking before the recent Spring meeting of the cattle feeders of the state, expressed the belief that the farmer's great need is a liberal education. It is important for the food producer to be familiar with all the up-to-date methods of production, but it is also important that he be familiar with other things besides mere farm efficiency. If he is going to get the greatest enjoyment out of life, reap the greatest rewards for his labor, and do the most for the benefit of his fellow men he must have a thoroughly rounded out education. He must study history to know how other men have lived and be able to profit by their mistakes. He must be familiar with the great principles of economics so as to understand the problems of marketing and distribution and be able to combat the fallacious arguments of those who would keep control of agricultural products, putting their own interests above those of both producer and consumer. He must know political science that he may be prepared to take part in the making of laws governing the industry of agriculture which not only provides the food for mankind but which also produces forty per cent of the raw materials used in the industries of the United States.

At the present time the agricultural student at the Pennsylvania State College spends a large part of his first two years there in doing work in the School of Liberal Arts—work which prepared him for a better understanding of the problems which arise when he takes up the technical side of farming. Without in any way detracting from the importance of the study of farming problems, the importance of these other subjects should be emphasized. A broad education, whether gotten in college or on the farm, or partly in both places, is essential to the realization of the greatest things in agriculture.

Farm Prices and Others

IT IS easy to understand why one ingredient of a mixture of different materials will settle more quickly than others in a pail of water: It is because of the difference in specific gravity. It is not so readily seen why the prices of farm products go plunk to the bottom when business conditions become "unsettled," while other products remain long "in suspension." Herbert Hoover, in a letter to Senator Capper, quotes the following index numbers as typical in April:

It is obvious enough that this industry is suffering bitterly from the unequal progress in the various steps in economic readjustment. This is evidenced by the following recent typical index numbers—100 being 1913:

Farm crop prices	115
Farm meat animals	123
Building materials	212
House furnishings	275
Clothing	192
Fuel and light	297
Railway rates	166
Building-trade wages (skilled)	177
Wholesale index, all commodities	162

Certainly these levels must come into step or the agricultural industry and its standards of living will be undermined.

This condition is not justified by the belief that agriculture can stand such a state of affairs without going into bankruptcy longer than others, yet men in other industries show little inclination or willingness to do their part in bringing about an equitable readjustment. The farmer is told that "natural causes" operated in the case of his prices. Is he then to understand that unnatural causes are operating in other lines?

A Whole County Plays

THOSE who may be inclined to pessimism over the decline of neighborhood sociability and community spirit would do well to attend the annual Play Festival held by Chester County at West Chester, Pa. This year it was held on May 14 and the popularity of the movement was attested by the largest crowd ever assembled in the town. The event is literally what the name indicates—a real play festival. The people came from every part of the county in thousands of automobiles and the assemblage included babes in arms and grandfathers and grandmothers and every age between. It was a gathering of the public school children and their families, and the "old folks" enjoyed it no less than the children.

In addition to the purely social and spontaneous features, the basis of the event is the contests which have been prepared for and previously arranged. Thruout the year local contests in sports and studies are held in the schools and the winners become contestants in the County Play Festival. These contests include singing, declamation, drawing, the different studies, games, athletic sports, etc. The exhibits from the high schools and vocational schools form a pleasing and instructive feature. We know of nothing better calculated to promote acquaintance, sociability and real, live community spirit than the county play festival idea.

Our Washington Letter

After extensive hearings before the Committee on Agriculture, the Tinscher grain futures trading bill, passed the House by a vote of 269 to 69. As a result of these hearings, several recommendations made by Secretary of Agriculture Wallace and representatives of the grain exchanges were incorporated in the bill. The bill restricts sales in futures, prohibits transactions known as "puts and calls," and provides for the establishment of contract markets under the supervision of the Secretary of Agriculture.

The Townsend highway bill is now under consideration by the Senate Committee on Post Offices and Post Roads, of which Senator Charles E. Townsend of Michigan is chairman. Many representatives of the automobile and automobile manufacturers' associations, highway engineers, and farm organization leaders have appeared before the committee. The opening statement was made by Dr. T. C. Atkeson, Washington representative of the National Grange.

Senator Townsend says that he considers the expenditure of \$100,000,000 for a system of national highways as a solution for transportation interstate commerce, and to a great extent, employment problems now holding the nation, to be the most valuable investment he can imagine. "My idea," he says, "is that there be a commission of five to supervise Federal highway projects, chosen for their ability not political affiliations. This body as a department, and not a subsidiary bureau, would care for the difficulties of land travel."

The chief point of opposition is centered in the provision giving to the Federal Government authority to decide as to where highways receiving Federal aid shall be located. It is argued that this is unfair to the states which are compelled to appropriate one-half the cost of construction and all the cost of maintenance of the government highways system. Another objection is based upon a pretty well defined belief that commission government is contrary to our national ideals and that this phase of government administration should be curtailed rather than expanded.

Hearings on the "Slack-filled Package" bill before the House Committee on Agriculture are bringing out some interesting disclosures showing the necessity for a law to prevent the use of containers shaped so as to deceive the purchaser as to the quantity of the food contained therein. It was shown that many packages are partly filled, in some instances containing but one-third of their apparent capacity. The testimony before the committee indicates that the practice of deception by partially filled containers and by using containers which appear to hold a greater quantity than they actually hold has increased tremendously in the past years.

Representatives of the national associations of food manufacturers and wholesalers agreed in the main with the bill. A representative of the International Apple Growers' and Shippers' Association and the Farmers' Co-operative Marketing Association, while strongly favoring the bill, offered an amendment providing that fruits and vegetables in their natural unmanufactured state, when in original packages shall not be subject to the provisions of the bill, if by reason of shrinkage or the use of necessary quantity of suitable material the package is not filled with the food it purports to contain.

A bill introduced by Senator Kenyon of Iowa increases the amount of interest which can be paid on farm loan bonds from five to six per cent. The original act limits the amount of interest to five per cent and makes it possible to charge the borrower not to exceed one per cent in excess of the interest paid on the bonds, thus making the interest rate of farm mortgages not to exceed six per cent. This total of six per cent is not to be raised under the Kenyon amendment, but the banks will have to do business on a smaller margin. If the bonds sell as high as 51 per cent the banks would have to do business on one-half of one per cent.

The Johnson bill passed by the House and Senate limits the number of immigrants to come into this country between now and June 30, 1922, to 355,000 people. In view of the proposed restrictions it is interesting to note that only 2.8 per cent of the vast number of immigrants entering this country last year were farmers.—Elmer E. Reynolds.

May 28, 1921

HARRISBURG LETTER

The End of the Legislature.—The legislative session really ends this week. Atho the general assembly adjourned on April 28 the work of the lawmakers will not be complete until the Governor finishes acting upon the bills on Saturday and then the history of one of the most remarkable legislative gatherings may be written. The constitution allows the Governor thirty days in which to dispose of bills after the gavel falls and this year the Executive has certainly needed that time. It has taken many days to get a line on the finances and the final count of the legislative bills carrying money shows that something like \$139,000,000 was passed or about \$20,000,000 short of the revenue which can be counted upon with safety. The Governor says he proposes to do some vigorous cutting and the places where he cuts will be interesting to observe. There are two profitable lines for a Governor wishing to make a record—expenses of government and charities not under control of the state.

Delays in Laws.—Owing to the strike of the printers here the issuance of the laws approved has been held up and there have been some curious situations developed, people having sent men to Harrisburg to make copies of official acts and others having typewritten or mimeographed copies certified as official. In the case of the laws affecting departments of the government the officials have been able to get copies and then inform their people at the same time they give instructions. The Department of Public Instruction has issued a notable compilation of school laws which shows what each district will be called upon to do and what it will receive.

Assessors to Help.—Arrangements are being made by the Department of Agriculture to call upon the assessors to gather first hand data regarding crops and acreages as they do cattle for the triennial assessments. It is the plan of the statistical authorities to handle the proposition thru county commissioners and to return to each county such data as its officials may desire for their own use so that the assessors' returns will not only aid in getting reliable statistical compilations, but also furnish county tables for the first time.

May Enforce Law Soon.—Unless steps are taken by owners of orchards and farms in eastern counties to help exterminate the yellows it is possible the state may launch some test cases under the newly approved fruit tree disease act. This bill was drawn to meet numerous occasions which had arisen and where trees are not removed and diseases abated the owner is liable to \$100 fine.

Ten Dog Districts.—It is probable the State Department of Agriculture will establish ten districts for enforcement of the dog license act. These districts will be groups of counties each in charge of an agent who will direct prosecutions, the handling of the licenses being entirely for county treasurers, who will receive ten cents for every dog.

Will Test Horses.—One of the results of the conference conducted by the Bureau of Animal Industry this week was decision to test horses as well as cattle when state agents go to a farm on a hunt for tuberculosis. The conference was productive of valuable demonstrations and it came out that tuberculosis needed all the attention that could be given to it in dairy cattle, horses and poultry. It is believed effective work for stamping out certain parasitic diseases of sheep and for diminishing hog cholera was launched. The figures produced by Director T. E. Munce showed conclusively that while Pennsylvania is rapidly rising in the record of certified or accredited herds free from disease the investment in cattle, horses and poultry is so enormous constant vigilance must be maintained.

Can Insure Crops.—Pennsylvania can insure crops, just as is done in other states, under the terms of the new insurance code. For some time this state has had insurance against damage by hail or storms, but now policies may be written against damage by pests, weather or any other cause.

NEW YORK LETTER

Guernsey Sale.—Guernsey breeders are planning the biggest sale for September ever held in the state. Sixty of the best tuberculin tested females and several prize bulls will be offered to increase interest in the breed.

Apple Grading Law Benefits.—In the five years that apple grading has been enforced in the state the grade of state apples has been improved and consumers have been able to secure better fruit. An intensive campaign is to be begun this year to make New York apples, which are superior in flavor, as popular as western apples. Packing houses are considering the use of boxes as better suited to the market.

Dairy Marketing Conference.—New York farmers approve the latest step of the National Farm Bureau in appointing a committee of several dairy experts to study dairy marketing problem. The big national conference of representatives of 61 co-operative dairy marketing organizations approved the Dairyman's League pooling plan as correct in principle.

Dairy Herd Test Work.—Tompkins County plans to have work done by cow testing associations as a means of improving herd production. Franklin County has just started association testing. Otsego County is attracting attention because of successful results from testing. One dairyman who tested found he had slaughtered a pure bred bull who had 5 daughters that averaged over 13,300 lbs. of milk and 525 lbs. of butterfat. Some cows were found to produce 24 times as much as others. All feeding methods were improved, one man being able to make his calves gain 24 lbs. a day.

More Libraries.—The Governor has signed a bill encouraging more town and country libraries and the extension of the service of the state circulating libraries, also to make easier the establishment of free libraries, both publicly and privately supported.

NEW JERSEY NEWS

Milk Price Drops.—The retail price of milk in Trenton and other South Jersey communities is now 11 cents per quart or 7 cents per pint. This cut resulted from a conference of milk producers and distributors and manufacturers of milk products. The price was reduced two cents per quart, the farmers taking one and three-quarters cents of the drop. Cheese prices have also decreased along with other dairy products until pre-war prices are in force.

Fish and Game Chart.—The State Fish and Game Commission has issued a chart for 1921 from its headquarters in the State House, designating in black and white squares the open and closed seasons for fishing and gunning. They are free upon application to the secretary of the board. Hunting and fishing licenses apply only in fresh waters in the state, as to fishing, while no licenses are needed to fish in the Delaware River thruout its entire length nor in tidewater, so the report says, while it adds that tidewater means the extreme reach of a normal tide.

Warning on Containers.—New Jersey farmers and shippers of fruits and vegetables, who pack produce in closed containers for the market, are warned in a letter sent out from the State Department of Weights and Measures to all growers' associations

Pennsylvania Farmer

5-561

and granges thruout the State, that they must comply with the law requiring that such containers be marked with the name and address of the packer. The marking law has for its object honesty in shipments of commodities in closed containers. The practices of underfilling and toppling were so generally employed some time ago, that the reputation of this state for fine produce and honest weights was being impaired.

Guarding Forest Fires.—The establishment of the proposed State Constabulary on July 1, when the legislative appropriation for its use becomes effective following the appointment of a superintendent by Governor Edwards and confirming by the Senate in June, will be a valuable asset in checking forest fires in New Jersey, according to the officials of the State Department of Conservation and Development in charge of forestry.

Beekeepers Are Active.—Much activity is apparent among the beekeepers of the State, but particularly those of Mercer County and other Central Jersey sections. The Mercer beekeepers have planned a schedule of meetings which will be held as follows: May 27, Vineland, Frederick Green's apary; June 18, Orange, P. H. Fowler's apary; July 12, Sunnyside, Hunterdon County, Ross B. Pickel's apary; August 30, Arcola, Bergen County, Wygant and Van Buskirk's apary. The Mercer association has performed some very creditable work, tending to a fine exhibit of bee products at the Trenton Inter-state Fair in the coming fall. Arrangements have been made for the giving of larger premiums, so long as beekeepers show their interest by putting up worth-while exhibits.

MARYLAND LETTER

In an effort to improve living conditions on Maryland farms, the Extension Service of the University of Maryland, aided by the United States Department of Agriculture, is making a survey of conditions. They are sending questionnaires to the wives of farmers and inquiring as to the various advantages, the social facilities and home conditions of the rural families. One of the greatest needs of the farmers according to the questionnaire is the necessity for more system and efficiency in the operation of rural homes.

At a meeting of the Eastern (Md.) Farmers' Association last week the committee appointed to wait on the Threshermen's Association with a view to adjusting the price of threshing wheat, reported that the threshers refused to reconsider their demand for eight cents a bushel. The farmers have agreed not to pay any more than five cents a bushel, some contending that threshermen not affiliated with the association have promised to thresh for that price. The committee reported that the threshermen refused even to consider a change in price, and insisted on eight cents.

What will be planted in place of sweet corn and tomatoes? This question is agitating the farmers of the Eastern Shore now since these two crops will be practically ignored this year, as the canners have refused to make contracts. John A. Arringdale, president of the Farmers' Federation of Talbot County, has been in conference with the canners on the prospects of putting up lima beans. If they prove profitable, there may be a new industry grow out of it as far as Talbot county is concerned.

Altho the late frosts and freezes were believed to have killed the grapes in Kent County on account of the advanced condition of the blossoms, it is now stated that there will perhaps be one of the largest crops harvested in recent years. Altho the buds had fallen and tiny grapes had started before the freeze came, new blossoms are putting forth and the vines show every evidence of producing an abundance of fruit this season.

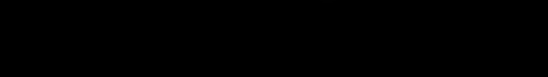
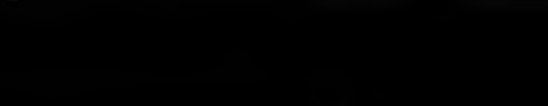
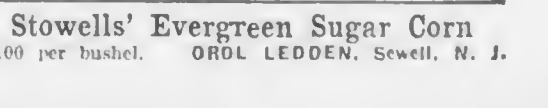
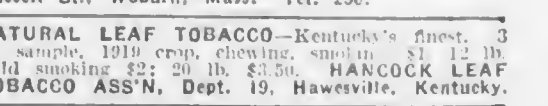
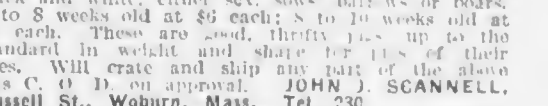
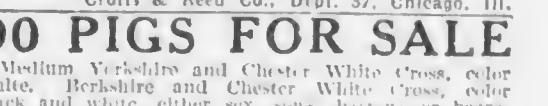
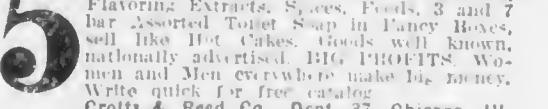
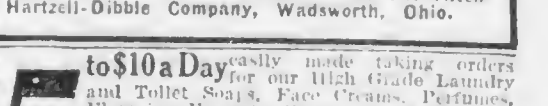
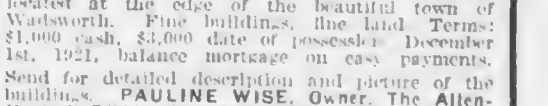
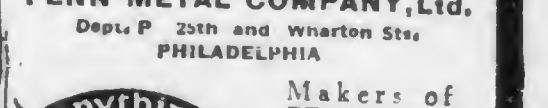
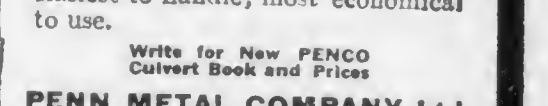
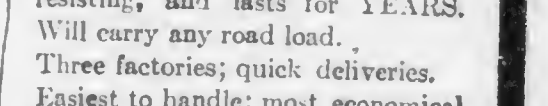
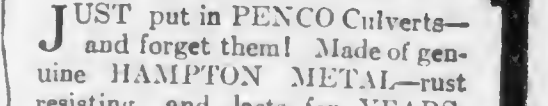
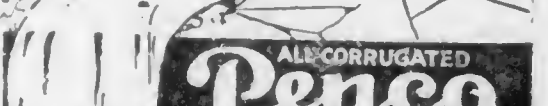
Hail as large as shellbacks fell in Frederick County last week during a heavy rain storm, but not much damage was done. The rain precipitation for one week broke all records in a six-year period. It totaled almost five inches.

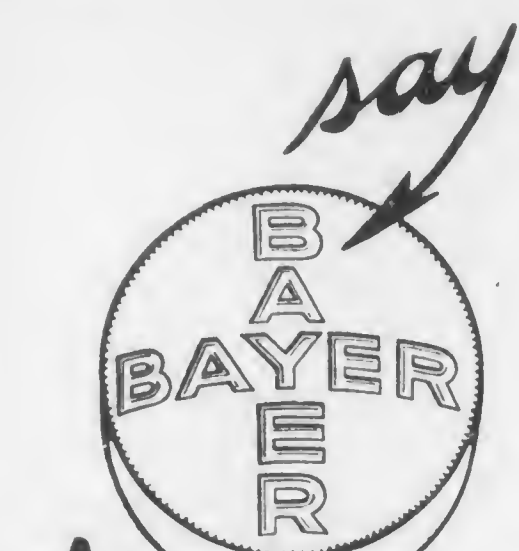
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261 S. Third St., Philadelphia, Pa.



Of Interest to Farm Women and Girls

An Appeal to Sunday Visitors

I would appeal to anyone who contemplates making their friends a Sunday visit by automobile, whether you reside in city or country, do not go unexpectedly to any home and keep another family away from church services. Find out their church hours, previous to your visit and then manage to arrive afterward.

A plan that has been adopted by the autoists of my old home town works out admirably and most satisfactorily to all parties concerned. Perhaps eight or ten persons plan to visit some friends in a nearby town. No matter how many go—they all carry a picnic lunch with them, letting the hostess know in advance of their coming. The hostess then generally provides the tea and coffee, and perhaps ice cream or sherbet for all, or perhaps she may serve just peaches and cream, strawberries and cream, or some other nice dessert from the farm fruits.

The guests let her know before hand that they are bringing the dinner with them, also the time they expect to arrive. She then has a chance to get tables and everything in readiness for their coming. In this way there is genuine pleasure for everyone, and the hostess is not dead tired when the visit is over.

I would especially urge anyone to hesitate before making a Sunday visit anyway, unless they have received a special invitation to come that day. Remember, this day is the only day of the week that most of the rural folks get any chance to rest, and above all things, the busy farmer's wife needs that one day for church going and recreation.

Last summer one of my neighbors told me that Sundays were her hardest days of the week as that seemed to be the day all her friends and relatives chose to make her a visit, until there was absolutely never a Sunday during the whole summer, that she had that day to herself. Then, on account of the hard week's work and a full Sunday with no opportunity for rest, she was so exhausted that a greater part of the next day had to always be spent in bed.

Friends are too often inconsiderate or thoughtless in regard to these things. If one has ever lived on a farm they must know that most of the housewives are rushed to death almost during the hot season—with cooking for the family and extra helpers thru haying time and harvesting.

The present day is a hard time all over the country for housewives, both in the city and country, as it seems impossible to hire a girl or woman who will help with the housework, no matter what wages are offered. Not many years ago, help was abundant, and one could entertain much more easily than they can at the present time.

This subject has been taken up by the Home Bureau and other organizations. They are unanimous in the belief that this problem should be discussed and given good consideration with the view of finding a solution that will not curtail the old-fashioned hospitality but will help maintain the right amount of social-

bility which, for our own good, must be kept up.—E. M. L. B.

RECIPES Six-Minute Strawberries

1 cup of berries; 1½ cups of sugar. Sometimes try cup for cup. Place on stove together and cook 6 minutes. Delicious.

Salad Dressing

Two eggs beat very light; ¼ cup sugar; pinch salt; piece butter size of a walnut; 1 cup cold water; 8 tablespoons vinegar; ¼ teaspoon mustard. Boil until it thickens. If kept in a cool place it will keep for quite a while. Use same for cold salad, only substitute cream for cold water and omit mustard.—Mrs. O. B. H.

A WORTHWHILE GIFT

The home convenience truck of the Agricultural Extension Service of the Missouri College of Agriculture, gave its first demonstration in Howard County starting Thursday, May 12. The first was on John Payne's farm near Ashland Church, the second on the farm of S. H. Woods, three miles east of Armstrong and the third meeting on the farm of Edwin Lewis one mile east of Glasgow. An actual installation of a sink, drain and pump was made in the house of S. H. Woods as a birthday gift from Woods to his wife.—Missouri Farm News.

MAKING CHILDREN GROW

In addition to the right sort of food, rightly prepared and rightly fed, children need plenty of sleep under the right conditions. This means regular time for going to bed, plenty of fresh air in the room, quiet and no lamps burning to use up the oxygen in the air and to disturb the optic nerves. In the case of young children, there should be one or more rest and sleep periods during the day.

Age	Hours
First year	18 to 20
2nd to 3d year	14 to 18
4th to 5th year	13 to 16
5th to 6th year	13
6th to 8th year	12
8th to 10th year	11½
10th to 12th year	11
12th to 14th year	10½
14th to 16th year	10
16th to 18th year	9

Other Essentials

Have the child play outdoors some every day. Train the child to drink four to six glasses of water every day. Children may think they cannot drink so much water, but they can gradually learn to drink four to six glasses a day. Nearly three-fourths of the body is water, and it must be constantly supplied to keep the blood and other fluids of the body of the right liquidity, to keep the tissues soft and flexible, to furnish the right dilution for the digestion and absorption of food materials, to flush the system and eliminate waste products. And you must also see that the child has the right kind and amount of food to meet the needs of a growing body.—Pearl McDonald.

PENNSYLVANIA FARMER PATTERNS

Give figures and letters of each pattern exactly as printed at beginning of each description or we will not be responsible for correct fitting of orders. Give bust measure when ordering waist patterns, waist measure for skirt, and age for children's patterns. Address Pennsylvania Farmer, 261 S. Third Street, Philadelphia, Pa.

3528.—Popular Housework Frock.—The pattern is cut in 6 sizes: 34, 36, 38, 40, 42 and 44 inches bust measure. A 38-inch size will require 7 yards of 24-inch material. The width of skirt at lower edge is 2½ yards. Pattern, 10 cents.



3529.—Handy Attractive Apron.—The pattern is cut in 4 sizes: Small, 34-36; medium, 38-40; large, 42-44; extra large, 46-48 inches bust measure. Medium size will require 3½ yards of 36-inch material. Pattern, 10 cents.

3497.—"Easy to Make" Apron.—The pattern is cut in 4 sizes: small, 32-34; medium, 36-38; large, 40-42; extra large, 42-48 inches bust measure. Medium size requires 4½ yards of 36-inch material. Pattern, 10 cents.



3502.—Neat House Dress.—The pattern is cut in 7 sizes: 34, 36, 38, 40, 42, 44 and 46 inches bust measure. A 38-inch size will require 6½ yards of 36-inch material. The width of the skirt at the foot with plaits extended is about 2½ yards. Gingham in check or plaid patterns, striped seersucker or percale are suitable materials. — Pattern, 10 cents.

A great promoter of neighborliness is owning a pressure cooker co-operatively. Does your neighborhood have one?

A pint of milk a day for each adult and a quart for each child does not mean all this milk must be drunk. When used in cooking, its effect on health is the same.

Backyards express personality, and a man is judged by the tin cans and rubbish piles he keeps.

Lots of action and little noise is a sign of a well-regulated home.

The Voice of the People

This department is reserved for use of our readers to discuss problems and matters of general farm interest. Write your views and comments briefly on any question of social, economic or educational importance and thus share them with others. Such articles should not exceed 200 or 300 words. Publication of such articles does not signify editorial endorsement or agreement.

PROTESTS TRUCK LICENSE FEES

An open letter to Senator Buckman with suggestions:

April 30, 1921.
Hon. Clarence B. Buckman,
Harrisburg, Pa.

Esteemed Friend:

On behalf of farmers I am sending a protest against the present system of collecting license fees from motor-truck owners. Money for highway maintenance should be collected on a mileage basis. Farmers as a rule make a very small mileage with their trucks. Their business is on the farm and not on the roads except for hauling produce to market and supplies home and you can easily figure that this mileage could not be very great compared with other business where trucks are in daily use.

The new increased fees for motor trucks will make farm motor truck ownership a doubtful proposition, except for those who do a large business. Take my own case as an illustration. I make about 2000 miles per year from a 100-acre farm and go to market three times a week in season. (The grain farmer will not make one half as much mileage). My license fees next year will be about \$10 in Pennsylvania, and the same in New Jersey, or 4 cents per mile for fees alone. Adding 22 cents for local road tax makes 6½ cents per mile for road maintenance.

How much would a motor truck corporation or owner pay for running the same sized truck a dilly trip from Philadelphia to Trenton and return, sixty miles or about 20,000 miles per year? Just .04 cents per mile. Probable not owning any real estate and therefore paying no local road tax. Is it a fair and just system that charges a farmer 6½ cents per mile traveled for road maintenance and a business truck 4 cents per mile for the same service? Or putting it another way, the farm and other truck owners whose business requires a small mileage, are building the roads for heavy mileage trucks to use almost free of charge. I am surprised that a Senator who is supposed to represent a farming district should introduce a bill which is so manifestly unfair to farm truck owners and at a time when farmers are facing a season in which profits are impossible, an account of high cost of supplies and less-than-pre-war prices for produce.

There is no more common sense in charging for road building by the license fee system than there would be for a gas company to charge for gas at so much per burner without regard to the amount of gas used.

It trucks wear out the roads they should be made to pay for doing it and the trucks standing on farms should not be made to pay for roads worn out by trucks in constant use. I do not believe in kicking against something better and here is a better method, not well thought out, but suggested as a working basis for future legislation by all states.

First—State Highway Department to issue license tags only to trucks equipped with high-grade odometers under department regulation and sealed by agents of department.

Second—Fees to be collected at rate of 1 cent for mile (more or less as needed) and on a sliding scale as to weight of truck and solid or pneumatic tires.

Third—Odometers subject to inspection by road officers at all times and absence of meters subject to heavy fine.

Fourth—Odometers to be tested at any time and place by authorized agents of Highway Department, and if found not recording, owner subject to fine. This would place upon the truck owner the whole burden of keeping meters in order or of letting them alone.

High grade and reliable odometers might have to be perfected and money might well be spent for this purpose at once.

Trusting that this matter may have your sincere consideration and that I may hear from you,
I am respectfully yours,
R. P. LOVETT,
Bucks County, Pa.

REMAKING RURAL COMMUNITIES

(Continued from Page 2).

The Center consolidated school, located some little distance from the Sargent school is probably destined to become one of the most famous consolidated schools in the United States. This building was dedicated in the spring of 1920 and the school district there embraces 153 square miles. This building is said to be the largest consolidated school building in the United States. At least it must be in length, for it is 308 feet long, and there are thirty-five rooms in the building. Center is just a small town of around 800 population, located fifteen miles north of Monte Vista on a spur line of railroad. Part of this district lies in two different counties.

In order that the school might have a good setting, thirteen acres of land were purchased at one side of the town. This will make it possible to maintain agricultural plots and develop fine grounds, which will become almost a park. Perhaps the most notable feature of this school is the splendid auditorium, probably one of the finest school auditoriums in any town of less than 50,000 population in this country. It has a seating capacity of 700 persons, and permanent theatre seats have been installed both on the main floor and in the balcony. There is a real stage, fitted out with scenery and a curtain, which alone cost \$300.

The building has a gymnasium, 36 by 70 feet, with a spectators gallery opening off the second floor of the building. There are shower baths and dressing rooms under the gallery. At one side of the gymnasium is a kitchen, where banquets may be prepared and served in the gymnasium. It is especially interesting to note that on the day of the dedication 2000 people were served at a big dinner at this school. It is needless to point out that it is perfectly equipped mechanically with electric lights, heating and ventilating systems, and telephones in each room.

The total cost of the building was about \$112,000. The first bond issue of \$82,000 carried by a vote of eight-three to five, and a second bond issue of \$45,000 for the completion and furnishing of the structure carried unanimously. There are some 400 pupils in the school, about half of whom come from the open country. The budget for one year's running expenses is about \$28,000. I recall that on the day of the dedication one man who had just purchased a farm not so far away visited the school to see how he could get inside of the consolidated district. Students in the high school here receive instruction in college preparatory, commercial work, vocational agriculture and vocational home economics, just as they desire.

Any one who is at all pessimistic with regard to consolidated schools would do well to take a trip to the San Luis valley and see just what has been accomplished. There are other consolidated schools in the valley, but these are outstanding examples. That consolidated schools can exist is proved by the fact that they do exist. The simple fact is that the children in these communities are getting good educations, just as good as they could in any city.

Editor's Note—This is the third of a series of articles on consolidated schools. The fourth, dealing with schools in Indiana, will appear in a future issue.

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There is a great satisfaction in owning an instrument which has the commendation and approval of some of the world's leading musicians. This the Weaver Piano has. It will have your commendation and approval, too, once you become the owner.

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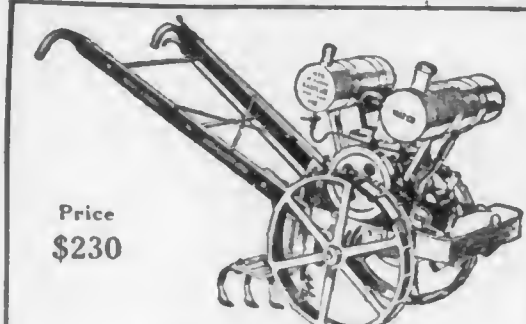
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The Farrell Hoist

If you have seen the cantaloupes grown for seed and the way they are harvested many farmers would be deterred from ordering from this source. Sometimes selected seed is used and sometimes not, the care given the crop is not always the best and the personal supervision such as a trucker would give this operation is generally neglected in the work of those chosen to grow the crop for seed.

It is wise to start a seed of known strain that has proven a success with a neighboring grower. Work upon this strain until you have it as near perfect as you can get it. Hill selection is the best and the fruit eaten by the family and judgment passed in this way is one sure method of gaining flavor to the melon. Two plants allowed to the hill will produce fruit of nearly uniform size. Earliness in the season is one of the desirable characteristics and hills developing mature fruit early in the

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Tried. All plants ready. Well packed, shipped safely
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HORTICULTURE

Cantaloupe Seed Selection and Spraying

THE cantaloupe is one of our fruits that demands rigid seed selection in order to make a success of its culture. Last year while selling our crop on first starting out the people asked the price and altho the fruit was placed at a reasonable figure they declined to buy saying they wished they could be sure of the flavor of the fruit. Immediately on seeing the trend of the people's thoughts we decided to allow the people to sample the melons and as soon as the buyer was approached a slice of the melon was offered for inspection and eating. The fruit was sold almost as fast as it could be unloaded from the truck, and what was left in the bottom was the fruit that had been mauled by the buyers and bruised on the road. Early melons of fair size and sweet juicy flavor are what are desired by the people, and in no other way can this be gained than by having our seed selected for us or doing the work of growing the seed ourselves.

The way we began our selection was by choosing heavily netted melons from apparently healthy sprayed vines. These melons were eaten at our own table and if the flavor and general appearance of the fruit met with our favor the seed was saved. This seed when saved was divided into lots the next year. The melons eaten during the early part of the season were given the preference of the good ground, and the following year showed a heavier yield of better flavored fruit.

In a separate space apart from the melon patch, especially selected seed was planted from vines that had showed promise of good performance. The plot certainly yielded a good crop of cantaloupes. Re-selection has been carried on every year and these cantaloupes always have a ready sale on the market.

Many farmers sell cantaloupes late in the season when the fruit is flat. It is sold at a very low figure and in most instances a man loses more than he gains for when he tries to sell other produce the people will remember the flat melons bought of him and will not be inclined to try his other truck.

If you have seen the cantaloupes grown for seed and the way they are harvested many farmers would be deterred from ordering from this source. Sometimes selected seed is used and sometimes not, the care given the crop is not always the best and the personal supervision such as a trucker would give this operation is generally neglected in the work of those chosen to grow the crop for seed.

It is wise to start a seed of known strain that has proven a success with a neighboring grower. Work upon this strain until you have it as near perfect as you can get it. Hill selection is the best and the fruit eaten by the family and judgment passed in this way is one sure method of gaining flavor to the melon. Two plants allowed to the hill will produce fruit of nearly uniform size. Earliness in the season is one of the desirable characteristics and hills developing mature fruit early in the

season should be selected and given the best ground and watched. Be sure to save enough seed for two years as one year may see the growth of the vines so poor or the weather so undesirable that the fruit will not be fit for selection.

Spraying

Blight, cucumber beetle and aphids are the greatest enemies to the cantaloupe. Foggy weather and heavy dews are another hindrance which allow blight to take a firm hold upon the patch. Cantaloupes should be grown as far as possible from cucumbers, pumpkins, squashes and even the proximity of the watermelon patch is undesirable. The watermelons may be covered with beetles and if the cantaloupes are some distance away there may be only a few but if they had been close together both alike would be injured by the beetles. Ground selected should not have grown cucurbits or melons for several years. Cutworms while the plants are young are a pest and spraying is ineffectual for these. Poisoned bran scattered over the field some time before the plants come up will help rid the patch of most of these pests, but replanting weekly until a sure stand is obtained is the best measure.

When the stand is obtained a hand spray delivering a dense, fog-like spray can be used until the plants begin to trail and are in blossom. When this stage is reached the power or horse spray that can deliver a vapor spray of 125 lbs. to the square inch will be found the best. Nozzles should be run close to the ground so that the undersides of the leaves will receive a good dose for it is here that the aphids lodge and that blight may first gain its foothold. A nozzle on either side of the row for the under side of the plants and spraying to the center of the plant together with those above will keep the plants in a vigorous condition free from disease and insects if the work is attended to every week. Care should be taken in moving the vines while spraying and picking the fruit to disturb the plants and stems as little as possible.

Bordeaux mixture standard strength should be used for the blight and arsenic in the form of arsenate of lead paste or powder for poisoning the insects.—James E. Toomey.

MARYLAND STRAWBERRY CROP

Maryland's strawberry crop is having difficulty in surviving the assortment of weather that has prevailed during the last two months. First it was warm weather that caused the plants to blossom prematurely, then spells of cold and warm weather to freeze and thaw them alternately, and lately it has been excessive rains to rot them. Despite this, berries from the lower Eastern Shore have been put on the market earlier this year than any year in the last quarter century. The rain has also affected wheat, according to reports, though the crop is still in fair condition.

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CHICKEN CHOLERA

We have a disease among our chickens which we cannot do much for. Now they seem to sit around and the droppings are as green as grass, and physiced very much. Sometimes they only live a day and some of them live for about one week. I have given them salts in their feed, also permanganate of potash and hyposulphate of soda in the drinking water. I keep them in a clean and well sprayed house. I have lost about 40 of last year's chickens. We very seldom ever lose any. Can you tell me anything that will check it?—A. W.

The symptoms of greenish droppings would indicate that the birds have chicken cholera. It is a germ disease and often difficult to eradicate. In acute cases the hens may die in a short time and in chronic cases they may live several weeks.

Remove the healthy birds to new quarters and thoroly spray the old with a coal tar disinfectant such as zenoleum or creolin. Disinfect the drinking dishes. The germs of cholera will be on the ground and it will help eradicate the trouble to give all feed in a trough which is occasionally disinfected with a 5 per cent solution of carbolic acid.

Intestinal antiseptics are useful in controlling the disease. Dr. Kaupp recommends the sulphocarbates compound in one-half grain doses twice daily. Two teaspoonfuls of the following mixture are recommended three times each day: Sulphate of iron, 1 dram; dried blood, 1 ounce; tincture of opium, 1 ounce. The medicine can be given with water or thin food.

If the cholera trouble is quite bad and the flock small it might pay to dispose of them and start with new stock after the house and yards have had time to become free from the germs. However a personal inspection might be necessary to determine that, and the poultryman who owns the conditions can best determine whether it is best to try and cure the trouble or start over with new stock.—R. G. K.

JUNE POULTRY REMINDERS

If possible place the late hatched chicks where they will not be constantly trampled by older stock. If they are all on the same range build feeding crates for the chicks. These enclosures can contain fresh water, sow milk and a hopper of dry mash. Much of the scratch grain can be scattered in the enclosure. Most of the crowding and trampling is at feeding time and if the young chicks can avoid it, they will eat more and grow more rapidly.

The best results with pullets will occur when they can be separated from the vigorous and clumsy cockerels. This gives the pullets more advantages at the hoppers and there will be less crowding in the pullet colony houses. As the early maturity of the pullets bears an important relation to fall and winter egg checks it pays to give those birds the best of growing conditions.

Sometimes geese are allowed to range with the young poultry but is seldom good management as the geese wash off their bills in the

drinking water and make the water very dirty. They also eat from the hoppers and gather up much scratch grain and frighten the growing pullets. Profits with geese depend upon raising them on cheap feed and that means plenty of grass until fattening time but not much feed beside grass.

When buying new geese it pays to clip one wing to prevent them from flying. We once had a Toulouse gander fly nearly a mile from home the first day it had freedom on the range. Leave three feathers on the end of the wing to act as a support. Otherwise the bird will have no means of holding up its wing until the feathers return but three feathers left on the end will cross over the back and prevent the wing from drooping.

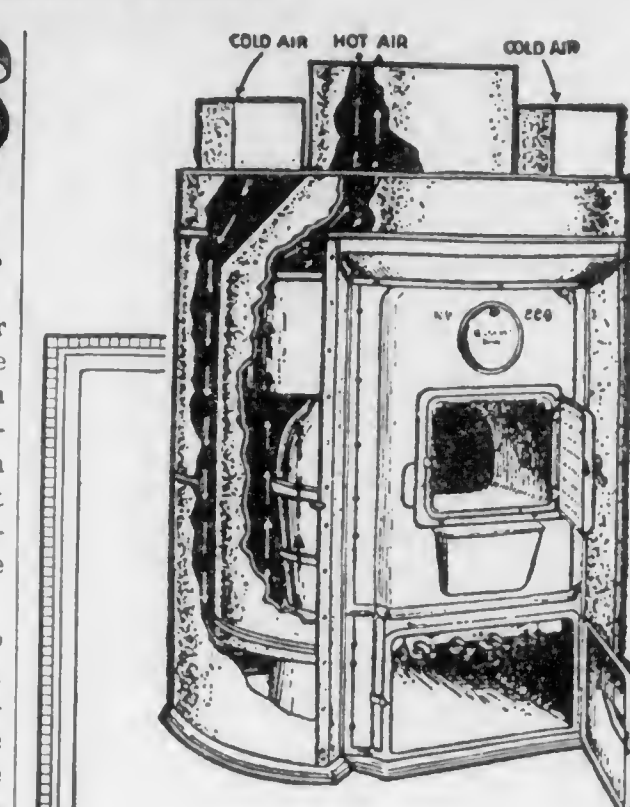
On many farms it is surprising how many different breeds of purebred poultry will be found running together. I have seen fine Buff Leghorn cockerels of show type running with Anconas during hatching eggs season and also fine white Leghorn cockerels running with purebred white Wyandottes and Barred Rocks. The reason is easy to understand. The breeders become tired of one kind of poultry and occasionally try a few of another breed. They dislike selling their old breed because the birds are needed for eggs. So both breeds are retained and soon the flock is mixed. The best results in breeding poultry cannot come from such methods. The successful breeders study one breed and stick to it. They do not jump from one breed to another and end up with a mixed flock with nothing beyond its meat value.

Experienced poultrymen do not bother with sex indicators to test out their hatching eggs. These devices have proven of no value and are not generally advertised by publications working for the best interests of the poultry business. The shape of the egg has no relation to the sex of the chick it will contain. Nature seems to know what is best and has so far furnished us with no clue that will determine the sex of unborn chicks.

Get after the rats early in the summer and you cut down the chances of losing chicks and poultry feed. A poultry farm is a fine boarding house for a rat family because of the quantity of grain and mash feeds which must be on hand at all times. Substantial buildings on concrete foundations help cut down the rat population.

In general poultrymen feel that the egg business would be greatly improved by a 12-cent import duty on eggs that are in the shell and a 15-cent duty on dried or frozen eggs. The number of Chinese eggs received in this country has not been large compared with the number produced in this country. But those eggs do add to the surplus and it is the surplus which controls the egg market.

Selling hatching eggs and day-old chicks helps the skilled poultryman to divert his egg production from the usual markets during the time when eggs are cheap. By the time egg prices climb he has produced early hatched pullets to start laying and help in keeping up the farm income.—R. G. Kirby.



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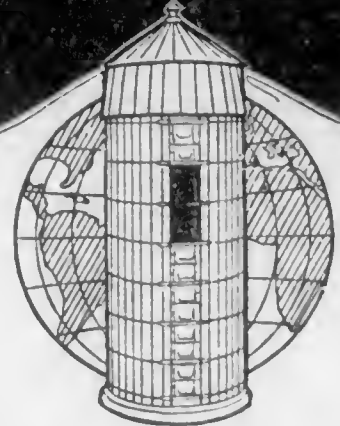


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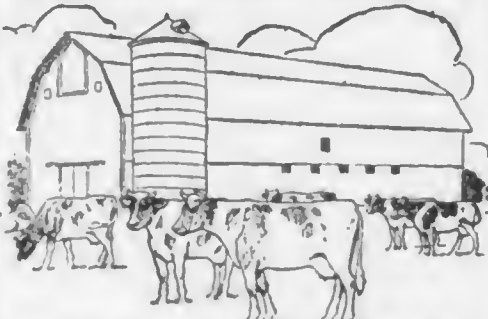
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Forage Crops for Swine

By W. H. TOMHAVE

PROFITABLE and successful for swine. It furnishes a reasonable supply of feed, especially during the early spring months and during the fall. During the months of July and August blue grass is not a very desirable pasture and some other crop should be provided during that time.

The use of annual crops in a rotation is an economical means of providing the necessary forage crops. These should be planted and pastured in a rotation. If a field of rye has been seeded in the fall it will provide early spring pasture before any other crop is ready. This crop does not supply an abundance of feed, but provides a succulence at a time of the year when the pigs and brood sows will relish green feed. A combination of Canadian field peas and oats makes a desirable mixture for early summer pasture. It should be sown at the rate of one and one-half bushels of oats and one bushel of the field peas per acre. A small amount of Dwarf Essex rape may be added to the mixture to good advantage. Successive seeding of some forage crop should follow at intervals of about four weeks up to the middle or latter part of the summer. Dwarf Essex rape has proven one of the most acceptable all summer crops for swine. It can be planted at any season, grows quickly and provides an abundance of feed if grown upon good land. The seed is cheap and this helps keep down the cost of growing the crop. The rape should be seeded at the rate of about 8 to 10 pounds per acre and the pigs turned on the pasture when the crop is from 8 to 10 inches high. A good field of rape can be pastured most of the season if it is given a chance to rest when pastured down for the first time. Other crops such as soy beans or field corn may be used to supply the pasture necessary.

Grain Supplements

Brood sows if they are in fair condition of flesh, can be maintained most of the summer on good forage crop without grain in addition. If they are bred for fall farrowing, it may be necessary to supply some grain during the latter part of the gestation period. During the early spring while they are suckling pigs and if they have large litters, they should have all the grain they will consume as any grain fed will be recovered in growth in the young pigs.

Young growing pigs cannot be developed on forage crops alone. An attempt to do so will be a loss of time and money. The small pigs should be fed all the grain they will consume up to the time they weigh about fifty pounds. After that period they should be allowed from two to three pounds of grain per 100 pounds of live weight daily in addition to good pasture. Such method of feeding will result in the most economical gains, although not as rapid gains as when a full grain ration is fed.

The grain mixture allowed will depend upon the kind of feed that can be secured. A very desirable mixture is one made up of corn meal

four parts, wheat middlings three parts, and tankage one part. If the tankage cannot be secured, 1½ part of oil meal will make a desirable substitute. This mixture should be fed twice a day at the rate suggested, depending upon the condition of the pasture. If it is inconvenient to feed twice daily, it may all be fed at one time.

Forage crops are usually planted in fields where there is no natural shade. This condition makes it necessary to provide shade of some kind. It is dangerous to keep pigs in an open lot without shade of some kind. Heavy losses are often encountered because of the lack of shade during hot weather. This shade may be provided by means of a rough board roof or old sacks, canvas or burlap nailed to a rough frame to protect the hogs from the hot sun. If trees can be included in the pasture lot, no further shade is necessary.

Plenty of clean water is as essential as feed and shade. It should be provided in such amounts that the hogs can have access to it at all times. Separate watering troughs are desirable although not essential. The water can be put in the regular feeding trough after the grain has been consumed.

The advantages of growing pigs by the forage route are numerous. It means a better and more uniform lot of market hogs than can be developed in a dry lot. They will be ready for market at an earlier age which usually means an added profit. The pigs are thriftier and give a more attractive appearance to the farm. The amount of grain saved is also an item of importance. No farmer can afford to continue growing swine without the use of forage crops and expect to meet the competition from the grower who follows an up-to-date method of production.

HORSE DAY A SUCCESS

The Horse Day held at the Bennett Farm one mile south of Indiana was very successful from every standpoint. Although the weather was not very agreeable in the forenoon, it was all that could be hoped for in the afternoon.

The large double barnfloor made a suitable auditorium for the 300 farmers who were in attendance. Baled hay was used for seats. The first speaker who was introduced by the Chairman, J. W. Warner, was Rev. J. T. Davis, representative from Indiana County. Rev. Davis spoke along the line of the importance of improvement of the livestock of Indiana County.

The next speaker, Dr. Church, deputy state veterinarian, outlined the new stallion law and gave valuable statistics relative to the present status of stallions in Pennsylvania.

Dr. Dick of the University of Pennsylvania gave valuable information in his address concerning Horse Power as compared with mechanical power. He mentioned the fact that 75 per cent of the horses of Pennsylvania, New York and the East are purchased from the Middle West.

The horse judging contest was the crowning event of the day. Two splendid rings of Belgian geldings were used in the contest. The presence of men from New York State, Ohio, Pittsburgh, Johnstown and all of the neighboring counties is surely evidence that there is an increasing interest in better horses. Many expressed the desire that Horse Day be made an annual event.



THE PROPER CARE OF DAIRY UTENSILS

Much spoiled milk and butter can be traced to half-cleaned milk pails and dairy utensils. Doubtless, had we the use of a powerful microscope, many utensils, supposed to be clean, would show millions of tiny bacteria. These organisms multiply with astonishing rapidity and cause strong tastes in milk and rancid butter, if they are not killed. Washing with lukewarm water is not sufficient to kill germs. In the first place it is important to have the right kind of milk pail. Wood should never be used, as it is almost impossible to clean a wooden surface. Galvanized iron is not the best material for milk pails, as the surface is too rough to be cleaned readily. Smooth tin is best and there should be just a few angles and seams as are found absolutely necessary.

The best way to clean milk pails is by the use of warm water and washing powder, soda or some of

strides in the industry. With a total of seventy-one associations now in operation, Pennsylvania ranks second in the United States in the number and scope of work accomplished in bettering dairy production.

According to a statement issued by the Agricultural Extension Division of the Pennsylvania State College, which directs county agent work throughout the state, 1922 farmers and dairymen are members of the 71 cow testing associations. A total of 771 "boarder" cows were discarded from their herds as a result of the test that showed them to be producing less milk than the cost of their feed warranted. This figure is somewhat lower than last year due to the fact that so many associations were operated for the first time in 1919 and the percentage of poor cows was much higher. Each year as the association members benefit from the tests the number of discards will decrease as the number of good cows grows.

There were 24,215 cows tested in



Gerar Pearl 23595, a Guernsey Cow With Some Excellent Records. She Has Several High-Producing Daughters and Grand-daughters

the commercial cleansers. A good stiff brush is preferable to the dishcloth. The latter is not sanitary, even at its best, while a good brush can be cleaned without much trouble. After a thorough washing, the pails should be scalded with boiling water. This treatment will kill many of the germs. Then hang the utensils in the sun so all water will drain out. The sun kills bacteria and clean air is death to the germs which make trouble. It is a good plan to have a regular place to hang the pails for drying. Never wipe them. Let them dry by evaporation. Live steam is the best disinfectant but this is not at hand on the ordinary farm, so scalding water may be used. It pays to take good care of the utensils. This also applies to the separator and the churn, where butter is made on the farm.—C. H. Chesley.

COW TESTING BOOSTS PENNSYLVANIA AS DAIRY STATE

Headed for better and greater milk production for Pennsylvania with the hope of establishing the state as the foremost dairy center in the country, Pennsylvania farmers and dairymen, with the assistance of the cow-testing associations are making rapid strides in the industry.

Uncle Ab says that the man who helps to scatter sunshine never stays long in the shadows.

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Act Quick! We bought at a tremendous sacrifice, a stock of high-grade material suitable for New Ross Silos which we are selling at less than pre-war prices. As long as they last, about 30 days, those who act quick get biggest silo bargain ever offered. Write Dept. 271 THE E. W. ROSS CO., Springfield, Ohio.

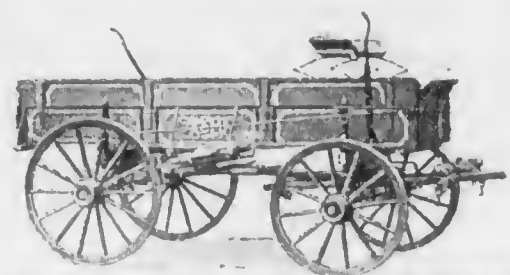
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TALKS WITH THE BOYS

Young Farmers at State College

THE young farmers of Pennsylvania are to have a big share in the Annual Summer Farmers' Week of the Pennsylvania State College. This program will begin two days ahead of the general program and continue until Friday. The dates are June 20th to 24th, inclusive. The first formal meeting will be a big get together and get acquainted program Monday evening.

Free sleeping quarters will be provided for the young people in the college dormitories. The entire main building, which will accommodate several hundred has been turned over to the boys for the week, and the girls will be very comfortably quartered in one of the girls' cottages on the campus. Board at reasonable rates will be available in college boarding clubs.



Team from Newfoundland, Wayne Co., Pa., Vocational School, winner of the Holstein-Friesian Association's silver trophy, at the 1920 Young Farmer's Week. This was Pennsylvania's team at the National Dairy Show, Chicago, October, 1920. Left to right—R. E. Wakely, County Agent; Rush Simonds, Ross Osborne, Friend Uhl, J. J. Jacobs, vocational supervisor.

The program is to be a happy combination of instruction, judging practice and recreation. The members of the college teaching and extension staffs will be in charge of the instructional work. In the contests and recreational programs they will be assisted by supervisors of agriculture from the Bureau of Vocational Education. The athletic program will include baseball, tennis and a variety of organized games that are suited to the open country.

In order to facilitate the work and make it possible for those who attend to concentrate on the things in which they are most interested there will be four groups for instruction and to students taking work in vocational agriculture in vocational schools or departments, but enrollment is not limited in any way. Any boy or girl who is interested in better agriculture is cordially invited to enroll. In order to be eligible to enter the judging contests on Thursday, one must have judged in a contest previously, but this requirement can be met in connection with the judging work on the preceding days of the program.

A special invitation is extended to all vocational directors and supervisors, and local club leaders, to be present. Accommodations will be provided in the dormitories the same

as for the young farmers or if it is desired room and board will be secured in a fraternity house at reasonable rates. There will be much worth-while for all leaders in the program of Tuesday and Wednesday.

Dean Watts and everyone in the School of Agriculture consider it an honor to act as hosts to the Young Farmers of the Keystone State. They want to get acquainted with the State's future farmers. The acquaintances that will be formed with the college staff and with young farmers from other counties comprise a large part of the real value of the trip.

Prospects now are bright for the biggest and best Young Farmer's Week the College has ever had. On Monday, June 20th, all roads will lead to Penn State.

LETTERS FROM THE BOYS

Dear Editor—I have read the Boys' Page very often and think it very good. You sure have a lot of letters from the boys. I live on a farm of 52 acres. We have two horses, one cow, 60 chickens and a dog. We have about a 150 little chicks.

I was born in Missouri. We moved to Pennsylvania when I was eight years old. Our school closed May 6th. Our teacher's name was Miss Craig and the name of our school is Point Pleasant. There are 25 pupils who go to our school. I have two sisters and one brother. One sister is at home and the other one is in Missouri. One is in the eighth grade in school and hopes to get to high school next year. We built a fence yesterday afternoon. Our horses' names are Betty and Jeff. One is a roan and the other one is a black horse.

S. R. Snyder has a pretty good idea about a pigeon house. I think I will try his way as we have about 20 pigeons about our place.

Can anybody tell me how to keep the crows away? I am getting a new stock of chickens; we did have Plymouth Rocks but now we have the white Leghorns. I have a little pet hen and she is looking in at me now. I have not missed a day of school for two years. Our school is about a mile from my home.—Robert L. McCartney, Beaver Co., Pa.

Profit, Not Prophet

A colored gentleman named Joshua Johnson was arrested for making whisky. When his case was called the judge jokingly asked him if he was any relation to the Joshua that made the sun stand still.

"No, sah," replied Joshua. "I see no 'lation to dat guy, but I see the real and 'riginal Joshua that made de moonshine."

Waste not—want not.



Young Farmers at State College During Young Farmer's Week, 1920

PASSING EVENTS IN PICTURES



1—Enrico Caruso, Premier Tenor of the Metropolitan Grand Opera Company and Mrs. Caruso returning from a motor ride thru Central Park recently.

2—Two American Polo players practicing for the international matches in England.

3—Members of the British Polo Team practicing at Twidworth in the heat of a scramble for possession of the ball.

4—Pulling one down from the sky! George Kelly, who towers about 7 feet above the earth, negotiating a 10-foot wild throw.

5—Larry A. Brown, U. of P. runner, winner of Mile Race in Penn Relay Carnival recently held at Franklin Field.

6—Five hundred Bryn Mawr College girls celebrating May Day. Insert: Miss M.

7—Carey Thomas, president of Bryn Mawr and the "Queen of the May."

8—It takes yards and yards of ribbon and much time to make a hat like this one.

9—The "Gar II, Jr." raced from Miami, Fla., to New York. Insert: G. A. Wood, owner and helmsman.

10—Uncle Sam's new Burglar Proof Container Car, to be used by the Post Office Dept.

The Valley of the Giants

By PETER B. KYNE

Chapter IV

Synopsis—John Cardigan, a middle-aged man—a plant in frame and mind—was a pioneer settler along the Pacific coast in Humboldt County, California, in 1850. His business was cutting the giant trees into lumber. His young wife died and was buried among the redwoods in "The Valley of the Giants," as he called the spot which he loved and reserved as a shrine to her memory. Bryce, Cardigan's only son, was an intimate friend of his father—who planned that he should inherit the great lumber business which he had built up. Bryce had a brief love affair with Shirley Sumner, a visitor to the neighborhood, but she was soon forgotten. Cardigan tried to buy a tract of timber adjoining his and refused to be bluffed into raising his offer for it. He determined to move his mill to the San Hedrin watershed and start logging operations there.

BRYCE pondered. "But isn't it cheaper to give him his price on Squaw Creek timber than to go logging in the San Hedrin and have to build twenty miles of logging railroad to get your logs to the mill?"

"It would be, son, if I had to build the railroad. Fortunately, I do not. I'll just shoot the logs down the hillside to the San Hedrin River and drive them down the stream to a log-boom on tidewater."

"But there isn't enough water in the San Hedrin to float a redwood log, Dad. I've fished there, and I know."

"Quite true—in the summer and fall. But when the winter freshets come on and the snow begins to melt in the spring up in the Yola Bolas, where the San Hedrin has its source, we'll have plenty of water for driving the river. Once we get the logs down to tidewater, we'll raft them and tow them up to the mill. So you see, Bryce, we won't be bothered with the expense of maintaining a logging railroad, as at present."

Bryce looked at his father admiringly. "I guess Dan Keyes is right, Dad," he said. "Dan says you're crazy—like a fox. Now I know why you've been picking up claims in the San Hedrin watershed."

"No, you don't, Bryce. I've never told you, but I'll tell you now the real reason. Humboldt County has no rail connection with the outside world, so we are forced to ship our lumber by water. But some day a railroad will be built in from the south—from San Francisco; and when it comes, the only route for it to travel is thru our timber in the San Hedrin Valley. I've accumulated that ten thousand acres for you, my son, for the railroad will never be built in my day. It may come in yours, but I have grown weary waiting for it, and now that my hand is forced, I'm going to start logging there. It doesn't matter, son. You will still be logging there fifty years from now. And when the railroad people come to you for a right of way, my boy, give it to them. Don't charge them a cent. It has always been my policy to encourage the development of this county, and I want you to be a forward-looking, public-spirited citizen. That's why I'm sending you East to college. You've been born and raised in this town, and you must see more of the world. You mustn't be narrow or provincial, because I'm saving up for you, my son, a great many responsibilities, and I want to educate you to meet them bravely and sensibly."

He paused, regarding the boy gravely and tenderly. "Bryce, lad," he said presently, "do you ever wonder why I work so hard and barely manage to spare the time to go camping with you in vacation time?"

"Why don't you take it easy, Dad?"

You do work awfully hard, and I have wondered about it."

"I have to work hard, my son, because I started something a long time ago, when work was fun. And now I can't let go. I employ too many people who are dependent on me for their bread and butter. When they plan a marriage or the building of a home or the purchase of a cottage organ, they have to figure me in on the proposition. I didn't have a name for the part I played in these people's lives until the other night when I was helping you with your algebra. I'm the unknown quantity."

"Oh, no," Bryce protested. "You're the known quantity."

Cardigan smiled. "Well, maybe I am," he admitted. "I've always tried to be. And if I have succeeded, then you're the unknown quantity, Bryce, because some day you'll have to take my place; they will have to depend upon you when I am gone. Listen to me, son. You're only a boy, and you can't understand everything I tell you now, but I want you to remember what I tell you, and some

The Old Songs

These ragtime songs they are singing now
May be the proper thing,
But they don't appeal to me like the songs
Which our child folk used to sing.

I never hear the ragtime song,
No matter where I roam.
That makes my heartstrings quiver
Like "My Old Kentucky Home."

"Lorena" was another song
That all our heartstrings wrung,
Around at social gatherings,
When all us folks were young.

We'd "Wait for the Wagon,"
And we'd tell of "Nellie Gray,"
And "Old Susannah" got her turn,
And likewise "Old Dog Tray."

And "Massa's in the Cold Ground";
We'd sing that by the hour

Then, feeling sad, we'd finish with
"A Little Faded Flower."

These are the songs that round our hearts
The spell of music flung,
These are the songs the people sang
When us old folk were young.

We knew some operatic songs
As well as these, be'gee;
"The Heart Bowed Down," like-wise its mate,
"Then You'll Remember Me."

And when we tired of opera,
The simpler things we'd try,
And make the rafters fairly ring with
"Comin' Thru the Rye!"

Oh, you can have your ragtime songs;
Give me the songs they sung
Around at social gatherings
When us old folk were young.

—J. J. T.

day understanding will come to you. You mustn't fail the people who work for you—who are dependent upon your strength and brains and enterprises to furnish them with an opportunity for life, liberty, and the pursuit of happiness. When you are the boss of Cardigan's mill, you must keep the wheels turning; you must never shut down the mill or the logging-camps in dull times just to avoid a loss you can stand better than your employees."

His hand, trembling old hand closed over the boy's. "I want you to be a brave and honorable man," he concluded.

True to his word, when John Cardigan finished his logging in his old, original holdings adjacent to Sequoia and Bill Henderson's Squaw Creek timber, he quietly moved south with his Squaw Creek woods-gang and joined the crew already getting out logs in the San Hedrin watershed. Not until then did Bill Henderson realize that John Cardigan had called his bluff—whereat he cursed himself for a fool and a poor judge of human nature. He had tried a hold-up game and had failed; a dol-

lumpage and paid for it with a certified check. With his check in his hand, Henderson queried:

"Colonel, how do you purpose logging that timber?"

The Colonel smiled. "Oh, I don't intend to log it. When I log timber, it has to be more accessible. I'm just going to hold on and outgame your former prospect, John Cardigan. He needs that timber; he has to have it—and one of these days he'll pay me two dollars for it."

Bill Henderson raised an admonitory finger and shook it under the Colonel's nose. "Hear me, stranger," he warned. "When you know John Cardigan as well as I do, you'll change your tune. He doesn't bluff."

"He doesn't?" The Colonel laughed derisively. "Why, that move of his over to the San Hedrin was the most monumental bluff ever pulled off in this country."

"All right, sir. You wait and see." "I've seen already. I know."

"How do you know?"

"Well, for one thing, Henderson, I noticed Cardigan has carefully housed his rolling-stock—and he

hasn't scrapped his five miles of logging railroad and three miles of spurs."

Old Bill Henderson chewed his quid of tobacco reflectively and spat at a crack in the sidewalk. "No," he replied, "I'll admit he ain't started scrapin' it yet, but I happen to know he's sold the rollin'-stock an' rails to the Freshwater Lumber Company, so I reckon they'll be scrapin' that railroad for him before long."

The Colonel was visibly moved. "If your information is authentic," he said slowly, "I suppose I'll have to build a mill on tidewater and log the timber."

"Twon't pay you to do that at the present price of redwood lumber."

"I'm in no hurry. I can wait for better times."

"Well, when better times arrive, you'll find that John Cardigan owns the only waterfront property on this side of the bay where the water's deep enough to let a ship lie at low tide and load in safety."

"There is deep water across the bay and plenty of water-front property for sale. I'll find a mill-site there and tow my logs across."

"But you've got to dump 'em in the water on this side. Everything north of Cardigan's mill is tide-flat; he owns all the deep-water frontage for a mile south of Sequoia, and after that come more tide-flats. If you dump your logs on these tide-flats, they'll bog down in the mud, and there isn't water enough at high tide to float 'em off or let a tug go in an' snake 'em off."

"You're a discouraging sort of person," the Colonel declared irritably. "I suppose you'll tell me now that I can't log my timber without permission from Cardigan."

Old Bill spat at another crack; his faded blue eyes twinkled mischievously. "No, that's where you've got the bulge on John, Colonel. You can build a logging railroad from the southern fringe of your timber north and up a ten cent grade on the far side of the Squaw Creek watershed, then west three miles around a spur of low hills, and then south eleven miles thru the level country along the bay shore. If you want to reduce your Squaw Grade to say two per cent, figure on ten additional miles of railroad and a couple extra locomotives. You understand, of course, Colonel, that no locomotive can haul a long trainload of redwood logs up a long, crooked, two per cent grade. You have to have an extry in back to push."

"Nonsense! I'll build my road from Squaw Creek gulch south thru that valley where those whopping big trees grow. That's the natural outlet for the timber."

"But that valley ain't logged yet," explained Henderson.

"Don't worry. Cardigan will sell that valley to me—also a right of way down his old railroad grade and thru his logged-over lands to tidewater."

"Bet you a chaw o' tobacco he won't. Those big trees in that valley ain't goin' to be cut for no railroad right o' way. That valley's John Cardigan's private park; his wife's buried up there. Why, Colonel, that's the biggest grove of the biggest sequoia sempervirens in the world, an' many's the time I've heard John say he'd almost as lief cut his right hand as fell one o' his giants, as he calls 'em. I tell you, Colonel John Cardigan's mighty peculiar about them big trees. Any time he

can get a day off he goes up an' looks 'em over."

"But, my very dear sir," the Colonel protested, "if the man will not listen to reason, the courts will make him. I can condemn a right of way, you know."

"We'll," said old Bill, wagging his head sagely, "mebbe you can, an' then again mebbe you can't. It took me a long time to figger out just where I stood, but mebbe you're quicker at figgers than I am. Anyhow, Colonel, good luck to you, whichever way the cat jumps."

This illuminating conversation had one effect on Colonel Seth Pennington. It decided him to make haste slowly; so without taking the trouble to make the acquaintance of John Cardigan, he returned to Detroit, there to await the next move in this gigantic game of chess.

Chapter V

No man is infallible, and in planning his logging operations in the San Hedrin watershed, John Cardigan presently made the discovery that he had erred in judgment. That season, from May to November, his woods-crew put thirty million feet of logs into the San Hedrin River, while the mill sawed on a reserve supply of logs taken from the last of the old choppings adjacent to Squaw Creek. That year, however, the rainfall in the San Hedrin country was fifty per cent less than normal, and by the first of May of the following year Cardigan's woods-crew had succeeded in driving slightly less than half of the cut of the preceding year to the boom on tidewater at the mouth of the river.

"Unless the Lord'll gi' us a lot more water in the river," the woods-boss McTavish complained, "I dinna see how I'm to keep the mill runnin'." He was taking John Cardigan up the river bank and explaining the situation. "The heavy butt-logs hae sunk to the bottom," he continued. "We a normal head o' water, the lads'll move them, but wi' the wee drapple we have the noo—" He threw up his hamlike hands despairingly.

Three days later a cloud-burst filled the river to the brim; it came at night and swept the river clean of Cardigan's clef logs. An army of Juggernauts, they swept down on the boiling torrent to tidewater, reaching the bay shortly after the tide had commenced to ebb.

Now, a chain is only as strong as its weakest link, and a log-boom is a chaplet of small logs, linked end to end by means of short chains; hence when the vanguard of logs on lip of that flood reached the log-boom, the impetus of the charge was too great to be resisted. Straight thru the weakest link in this boom the huge saw-logs crashed and out over Humboldt Bar to the broad Pacific. With the ebb tide some of them came back, while others, caught in cross-currents, bobbed about the Bay all night and finally beached at widely scattered points. Out of the fifteen million feet of logs less than three million feet were salvaged, and this task in itself was an expensive operation.

John Cardigan received the news calmly. "Thank God we don't have a cloud-burst more than once in ten years," he remarked to his manager. "However, that is often enough, considering the high cost of this one. Those logs were worth eight dollars a thousand feet, board measure, in the millpond, and I suppose we've lost a hundred thousand dollars' worth."

He turned from the manager and walked away thru the drying yard, up the main street in Sequoia, and on into the second-growth timber at the edge of the town. Presently he emerged on the old, decaying skid-road and continued on thru his logged-over lands, across the little divide and down into the quarter-section of green timber he had told McTavish not to cut. Once in the Valley of the Giants, he followed a well-worn foot-path to the little amphitheatre, and where the sunlight filtered thru like a halo and fell on a plain little white marble monument, he paused and sat down on the now almost decayed sugar-pine windfall.

"I've come for a little comfort, sweetheart," he murmured to her who slept beneath the stone. Then he leaned back against a redwood tree, removed his hat, and closed his eyes, holding his great gray head the while a little to one side in a listening attitude. Long he sat there, a great, time-bitten devotee at the shrine of his comfort; and presently the barred look left his strong, kind face and was replaced by a little prescient smile—the sort of smile worn by one who thru bitter years has sought something very, very precious and has at length discovered it.

Chapter VI

It was on the day that John Cardigan received the telegram from Bryce saying that, following four years at Princeton and two years of travel abroad, he was returning to Sequoia to take over his redwood heritage—that he discovered that a stranger and not the flesh of his flesh and the blood of his blood was to reap the reward of his fifty years of endeavor. Small wonder, then, that he laid his leonine head upon his desk and wept, silently, as the aged and helpless weep.

For a long time he sat there lethargic with misery. Eventually he roused himself, reached for the desk telephone, and pressed a button on the office exchange-station. His manager, one Thomas Sinclair, answered.

"Thomas," he said calmly, "you know, of course, that Bryce is coming home. Tell George to take the big car and go over to Red Bluff for him."

"I'll attend to it, Mr. Cardigan. Anything else?"

"Yes, but I'll wait till Bryce gets home."

George Sea Otter, son of Bryce Cardigan's old half-breed nurse, was a person in whose nature struggled the white man's predilection for advertisement and civic pride and the red man's instinct for adornment. For three years he had been old man Cardigan's chauffeur and man-of-all-work about the latter's old-fashioned home, and in the former capacity he drove John Cardigan's single evidence of extravagance—a Napier car, which was very justly regarded by George Sea Otter as the king of automobiles, since it was the only imported car in the county. Upon receipt of orders, therefore, from Sinclair, to drive the Napier over to Red Bluff and meet his future boss and one-time play-fellow, George Sea Otter arrayed himself in a pair of new black corduroy trousers, yellow button shoes, a blue woolen shirt with a large scarlet silk handkerchief tied around the neck, a pair of beaded buckskin gloves with fringe dependent from the gauntlet, and a should worry all the time when you were riding him. We don't want our little boy to get hurt."

shield of the Napier he fastened an orange-colored pennant bearing in bright green letters the legend: "My City—Sequoia." As a safety-first precaution against man and beast enroute, he buckled a gun-scabbard to the spare tires on the running-board and slipped a rifle into the scabbard within quick and easy reach of his hand; and, arrayed thus, George descended upon Red Bluff at the helm of the king of automobiles.

When the overland train coasted into Red Bluff and slid to a grinding halt, Bryce Cardigan saw that the Highest Living Authority had descended from the train also. He had elected to designate her thus in the absence of any information anent her Christian and family names, and for the further reason that quite obviously she was a very superior person. He had a vague suspicion that she was the kind of girl in whose presence a man always feels that he must appear on parade—one of those alert, highly intelligent young women so extremely apt to reduce an ordinarily intelligent young man to a state of gibbering idiocy or stupid immobility.

Bryce had traveled in the same car with the Highest Living Authority from Chicago and had made up his mind by observation that with a little encouragement she could be induced to mount a soap-box and make a speech about Women's Rights; that when her native state should be granted equal suffrage she would run for office or manage somebody's political campaign; that she could drive an automobile and had probably been arrested for speeding; that she could go around any golf links in the country in ninety and had read Mac-

terlinck and enjoyed it.

Bryce could see that she was the little daughter of some large rich man. The sparsity of jewelry and the rich simplicity of her attire proved that, and moreover she was accompanied by a French maid to whom she spoke French in a manner which testified that before acquiring the French maid she had been in the custody of a French nurse. She possessed poise. For the rest, she had wonderful jet-black hair, violet eyes, and milk-white skin, a correct nose but a somewhat generous mouth. Bryce guessed she was twenty or twenty-one years old and that she had a temper susceptible of being aroused. On the whole, she was rather wonderful but not dazzling—at least, not to Bryce Cardigan. He told himself she merely interested him as a type—whatever he meant by that.

The fact that this remarkable young woman had also left the train at Red Bluff further interested him, for he knew Red Bluff and while giving due credit to the many lovely damsels of that ambitious little city, Bryce had a suspicion that no former Red Bluff girl would dare to invade the old home town with a French maid. He noted, as further evidence of the correctness of his assumption, that the youthful baggage-smasher at the station failed to recognize her and was evidently dazzled when, followed by the maid struggling with two suit-cases, she approached him and in pure though alien English (the Italian A predominated) inquired the name and location of the best hotel and the hour and point of departure of the automobile stage for San Hedrin. (Continued Next Week.)

A Story for Children

How Mickey Got His Pony

Is there any boy or girl who would not like to have a pony? I don't believe there is, and Mickey Farren was a little boy who wanted a pony more than anything else in the whole world.



Mickey

Mickey winked back the tears and turned away, saying "I-I guess I could manage a great big horse, I could."

That same summer, Mickey's parents had to go away, and Mickey was sent to his grandfather's place in the country. When he would write to his father he hinted that he was doing wonderful things, but he did not tell all.

When the summer was almost over, Mickey's parents came to the farm, too. The night they arrived, Mickey said, "I am going to show you something after supper." And he was so excited he could hardly eat. He and grandfather seemed to have a great secret and every once in a while exchanged winks.

After supper Mickey disappeared. All the folks gathered on the front porch for an evening chat. Pretty soon someone said "Look!"

Trotting down the lane was little Mickey on a big black horse. As he came nearer, he made the horse gallop and went sailing by the house with a yell. Mr. and Mrs. Farren were so surprised that they couldn't say one word. Mickey came up to the porch and slid from the horse's back. Running up to his father, he said with a mischievous grin.

"Father now may I have a pony? I can manage a great big horse. Don't you think I could manage a pony?"

What could father do after that? Well, Mickey got his dreamed-of pony, and father was mighty proud of his son.—L. M. K.

Poultry

Baby Chicks Pure Bred, 800,000 in 1921



To Your Door Prepaid By Us, Guaranteed Live Delivery

All our stock is of the Standard, on free range, and bred for heavy egg production, at a price to meet the times. They are all No. 1 only.

S. C. White Leg. 10c
S. C. Brown Leg. 10c
S. C. Buff Leg. 10c
Mixed Odds-Ends 10c

Barred Rocks 13c
White Wyandottes 13c
Black Minorcas 13c
Buff Orpingtons 18c
Black Minorcas 18c
Buff Orpingtons 18c

Give a trial order and you will always come back for more. Get our big chick offer. Order direct from this ad and save delay. Circular free.

WOLF HATCHING & BREEDING CO.
DEPARTMENT P. GIBSONBURG, OHIO

Stockton Hatchery

Strictly pure bred chicks, recognized as superior in production and quality.

Immediate Deliveries

Order direct from ad or prompt shipments guaranteed. All chicks shipped prepaid, safe delivery guaranteed.

Per 100 Per 500 Per 1000

S. C. White Leghorns \$12.00 \$5.00 \$3.75
Barred Rocks 13.00 6.00 4.25
Black Minorcas 13.00 6.00 4.25
White Wyandottes 12.00 5.00 3.50
Buff Orpingtons 12.00 5.00 3.50
Mixed Odds-Ends 12.00 5.00 3.50

Send your order NOW for immediate shipment. We have special prices on 500 or more. CATALOG FREE.

THE STOCKTON HATCHERY, STOCKTON, N. J.
Emmeri R. Wilson

SPECIAL

JUNE DELIVERIES

Per 100 Per 500 Per 1000

White Leghorns \$105 \$55 \$12
Barred Rocks 125 65 14
R. I. Reds 150 80 16

All purebred selected chicks—The same high quality chicks that cost 25¢ each in March and April. June supply limited. Place your order now. Safe delivery and full guarantee.

The Pine Tree Hatchery
JOSEPH D. WILSON, Stockton, N. J.

LEGHORN CHICKS

From our large, long-bodied, big-combed, vigorous hens, especially selected for large white eggs. We have already sold for breeders that have been selected from thousands of birds. They are handled in pure food hatchable eggs and

STRONG CHICKS

that will live if given half a chance. We have the largest flock of Leghorns in York Co., built up in 8 years from a beginning with less than 100 hens. We have not only made large stock records, but have also guaranteed Cornell Certified Stock for further improvement. Chicks for May and June, 1921, are now delivered.

P. E. RENTZEL, DOVER, PA.

STRICKLER'S

JUNE CHICKS

Will grow like weeds and be money makers for you. Two Baron Hens, Winter Yellow, Spring S. C. White, Leghorns. Vigorous heavy chicks, \$14 per 100; \$6 per 500; \$3 per 1000. Safe delivery, full guarantee.

Hatchings June 1-15-20-25. Postage paid, full guarantee, live delivery guaranteed.

LEONARD STRICKLER, SHERIDAN, PA.

Look! \$11 a Hundred and up

Postage paid, 65¢ per cent. FREE feed with each order. 40 breeds chicks, 40 breeds ducks, 40 breeds geese, 40 breeds turkeys. A hatch every week, all year.

Catalog free, stamps appreciated. CAMBRIE, OHIO.

BABY CHICKS

Delivered at your door, anywhere. We use the Purest Post charges.

Barred Rocks White Wyandottes
White Rocks Rhode Island Reds
Buff Rocks Black Minorcas
White Leghorns Anconas
White Leghorns Buff Orpingtons
Buff Leghorns Assorted

Price List. E. P. Gray, Box 45, Savona, N.Y.

LEGHORN—White, Buff & Brown

Leghorn Day Old Baby Chicks at \$11.00 per hundred. May delivery. QUALITY GUARANTEED. Satisfied customers in eight States. Circular free.

H. M. KUHN, Sycamore, Ohio

BIG STURDY CHICKS—Hatchings May 17, 24, 31, June 7 and 14

1000 Single Yellow Leghorns, \$20 per 100; 1000 Single Buff Leghorns, \$17 per 100; 500 Chickens per hen from each brood. Ducklings, 25¢ each. Order from this ad. Catalog free.

Sunny Side Poultry Farm, Copper Hill, N. J.

DAY-OLD CHICKS

Strong, vigorous fellows, the kind that live and grow. Carefully selected, open range, purebred utility stock. Price reasonable. Circular free. SUNBEAM HATCHERY, 2433 B. Main St., FINDLAY, OHIO

Veterinary

Conducted by W. C. Fair, V. S.

Advice thru this department is free to our subscribers. Each communication should state history and symptoms of the case in full; also the name and address of writer. Inquiries only will be published. We cannot make reply by mail. This is one of the most valuable columns of the paper and we invite readers to make use of it. Clippings from this column, when properly preserved and classified, make one of the most valuable medical symposiums a farmer-stockman can obtain.

Sore Neck.—This is the third year

that my black horse has been troubled with sore neck. Have applied salve to top of neck, but it fails to help him. M. C. D., Boalsburg, Pa. Clip off mane, wash the skin with soap and water and be sure that collar fits. Dissolve 1 oz. acetate of lead, 6 drams sulfate of zinc, 1 dram tannic acid in one quart of cold water and apply to upper part of neck three times a day.

Jaundice Icterus.—I have a mare 15 years old, which has been under the doctor's care for a week. He tells me she has a diseased liver. The white part of eyes are yellow. During her illness she spit up about 3 quarts of frothy water and her bowels were constipated. Her kidney action was faulty and irregular. When standing she kept hind legs well under body and was inclined to sit on her haunches. Her bowels are now active, but her kidneys do not act free. I forgot to mention, she has heaves. What shall I do for her? C. A. S., Elmira, N. Y.

Jaundice Icterus is a serious and not a disease, and may be due to a variety of conditions, but we meet with obstructive jaundice, malignant jaundice and jaundice of the newborn foal. Give her 15 grains of calomel and one ounce of bicarbonate of soda at a dose twice a day for a few days. Are you sure she is not foundered, if so stand her four feet in wet clay three hours a day.

Vertigo.—Partial Paralysis.—Several horses in this locality have been affected peculiarly, most of the sick ones have died. The attack comes on suddenly, the animal will be going along as usual and suddenly pitches forward, falls to the ground and is unable to get up, breathes very hard and hurriedly, pants as if in pain, points nose to side, kicks some, water coffee colored mares seem to be more prone to this ailment than geldings. Most of the animals are on adjoining farms. Have not heard of any mules having this sickness. I have been a reader of the Pennsylvania Farmer for 12 years. W. W., Clearville, Pa. The food and water supply should be investigated, besides an examination of the manure would be interesting. If possible ascertain the cause, then remove it. If the bowels are constipated give single dose of cathartic medicine. Give one dram fluidextract of nuxvomica and 30 grains of potassium iodide 3 times a day. Apply mustard and water to back three times a week. I would suggest a change of feed and water.

Bleeding Wart.—Tumor.—I have a cow with swelling under tail, noticed like a bleeding wart. First noticed it the size of a door knob, situated between vulva and anus. H. L., Williamstown, N. Y. Either cut, or twist or tie off bunch, then apply the following lotion twice daily—1 oz. acetate of lead and 4 oz. tannic acid dissolved in one quart of cold water. Failure to Come in Heat.—I have a cow 5 years old that has had 3 calves, last calf in May, 1920, since then she has failed to come in heat. J. L. Muncey Valley, Pa. She should be examined by veterinarian or trained dairymaid to ascertain why she fails to come in heat. Give her six grains of ground nuxvomica and a teaspoonful of capsicum at dose in feed twice daily.

Light Milker.—I have a cow that freshened last fall, since then she has milked fairly well, but for 30 days she has grown thin and gives only one quart of milk at a milking. No bunches in udder but milk is thick. L. D. M., West Newton, Pa. She is an unprofitable dairy cow and always will be, therefore you should dry her and as soon as fleshy market her to butcher.

WINTER LAYERS
S. C. Black S. C. White
14c LEGHORN REDS 18c
RHODE ISLAND REDS 18c
Postpaid: Safe Arrival Guaranteed
Shipment, \$1.25 each. Send for our free illustrated catalog.

BLACK & WHITE POULTRY CO., CANISTOTA, N. Y.

8-12-16 WEEKS S. C. W. LEGHORN

PULLETS

Free-range, farm-raised, from pedigreed breeding stock, \$1.25 each up. Interesting booklet and price list. Pottstown, Pa.

CHICKS 10 CENTS

S. C. W. Leghorns, 10c; Barred Rocks, 12c; Buff Rocks, 14c. Safe delivery guaranteed. Order from this ad or write for circular.

J. N. NACE, MCALISTERVILLE, PA.

S. C. White Leghorn Pullets

8 weeks old, Standard bred from heavy laying, free range, strong and vigorous stock. Will make excellent winter layers. Send for price list.

WALDO BABY CHICK CO., WALDO, OHIO

C. B. Huff's Barred Rocks

again win in North American Egg Laying Contest. My pen of 5 birds finished in 4th place, all varieties. This time, having 1,800 eggs in 52 weeks. Also first in 1st. Brahmas. Price \$1.00 per 100. C. B. HUFF.

Poultry



Big Reduction Now!

HILLPOT QUALITY CHICKS

Never lower in price—never higher in quality. Late May and June chicks mean a much larger percentage of pullets. That means \$60.00.

White, Brown or Black Leghorns \$14 per 100
\$7.00 for 50
\$3.75 for 25

Barred Rocks \$15 per 100
\$7.50 for 50
\$4.25 for 25

R. I. Reds or White Rocks \$16 per 100
\$8.50 for 50
\$4.50 for 25

White Wyandottes 100 50 25
Black Minorcas 125 62 50
Buff Rocks 125 62 50

Hatching Dates—June 1, 8, 15, 22

Rush That Order—Get These Chicks Promptly

Think of it! You get the same Hillpot Quality Chicks we sold for \$25 to \$35 per 100 earlier in the season. Send check or money order—cannot ship C. O. D. Prompt Parcel Post Freight, Safe delivery guaranteed anywhere within 1200 miles.

W. F. Hillpot, Box 28, Frenchtown, N. J.

Our Chicks that will lay more eggs next winter. Pure bred, real hatchlings, 20,000.

White & Buff Leghorns, \$15 per 100; 100 50 25. Barred Rocks, \$17 per 100; 100 50 25. Special Quality R. I. Reds, \$18 per 100; 100 50 25. Special Quality Buff Rocks, \$19 per 100; 100 50 25. Terms cash. Order direct from us. Safe delivery guaranteed. Hillpot, W. F. Hillpot, Frenchtown, N. J.

DAY OLD CHICKS STURDY

White & Buff Leghorns, \$15 per 100; 100 50 25. Barred Rocks, \$17 per 100; 100 50 25. Special Quality R. I. Reds, \$18 per 100; 100 50 25. Special Quality Buff Rocks, \$19 per 100; 100 50 25. Terms cash. Order direct from us. Safe delivery guaranteed. Hillpot, W. F. Hillpot, Frenchtown, N. J.

WILLIAM H. SPRINGER, WISNER, PA.

CHICKS

Broilers, Leghorns, Rocks and Reds, 10c each. Safe delivery guaranteed. Circular free.

W. A. LAUVER, McALISTERVILLE, PA.

LIVE POULTRY

May and all farm products wanted. Daily demand at good prices. 1885 & 1890, 325 North Front St., Philadelphia, Pa.

CRESTWOOD BABY CHICKS—325 North Front St., Philadelphia, Pa.

10,000 BRED TO LAY S. C. WHITE LEGHORN

hatched in two, 8 varieties, thousands per week. Healthy, strong, healthy, purebred, and up to date. Circular free. New Washington, Ohio HATCHERY.

TIFFANY'S SUPERIOR DUCKLINGS

Leading Varieties. Best Strains. Call ALDHAM POULTRY FARM, R-39, Phoenixville, Pa.

EGGS FOR HATCHING—Bred to lay Barred Rocks, Buff Rocks, White Wyandottes, 10c each. Safe delivery guaranteed. Circular free. C. W. PRICE, Hackettstown, N. J.

Livestock

SHORTHORNS 2 bulls, 7 and 12 mo. old. Sired by good son of Bar of Ansonia. Size, quality and price right. SHEM PEACHEY, ELK LICK, PA.

DOGS, MONKEYS, CANARIES and all. Send for catalog. Ashley Height, Paterson, N. J.

RED FOXES Wanted—Wild, healthy, big. Wm. G. MERION, WARD, PA.

DAIRY

Second Annual Guaranty Sale

Oneida County Holstein Club

In Combination with Herkimer County

Breeders on the Francis M. Jones Farm,

CLINTON, New York

June 7 and 8—Two Big Days

A sixty-day guaranty sale of selected individuals chosen by an inspection committee appointed by the Club

THE ENTIRE A. C. HOWE HERD will be a leading feature. In this extraordinary herd are 18 direct descendants of the 42-lb. cow, Tietje Queen De Kol, including her 30-lb. 2-year-old, Glen Alex Tweede De Kol with the latter's yearling daughter and a last November son sired by Spring Farm King. Glen Alex King Tweede, a full brother to this youngster, has 8 daughters and 3 sons in the herd.

A 2-year-old daughter of Champion Echo Sylvia Poulk from the 43-lb. 4-year-old, Tietje Queen De Kol 2d, is one of the outstanding entries in this consignment. Her daughter is likewise included and so a last September son of the 43-lb. 4-yr.-old, sired by Glen Alex King Tweede.

LAST YEAR'S SALE established a high standard of quality. The coming event, it is believed, will be even better. An earnest effort is being put forth to make this a sale that shall be fairly representative of the best that Oneida and Herkimer counties can produce in good Holsteins.

ELECTRIC CARS from Utica will be met at Clinton

Send for Catalog to

W. G. COMSTOCK, Sec'y, CLINTON, N. Y.

Catalog and Publicity, E. M. Hastings Co., Pulaski, N. Y.

WE OFFER

Yearling and Two-Year-Old HEIFERS

at Reasonable Prices

They are by 21-lb. sires, and bred to LANE-PARK STRAIGHT BREED. A 32-lb. bull, his dam milked over 100 lbs. in seven days. Grand TIAVS and CANTHIA, HOLANSA, LAIR.

Write or come to see us. Farm located 32 miles from Scranton, Pa.

CRYSTAL SPRING STOCK FARM, Monroeville, Pa.

MAPLE LAWN HOLSTEINS

High grade heifer calves, \$25 each. Safe arrival guaranteed. Shipped by express, reg. and extra cows in central New York. Write me when you will be in contact; my farm and office will give you quick, efficient service. For immediate sale, 100 heavy producing cows, all young, with freshen in next 60 days. Sterilizing in solution.

C. W. ELLIS, Jr., Maple Lawn Farm, Cortland, N. Y.

GUERNSEY FEMALES

of various ages. I have forty head, some with records, and offer any of them for sale at attractive prices. Will pay you to get in touch with me, if you are interested in buying registered Guernseys. A few bulls, too.

W. R. DUNDOP, WEST GROVE, PA.

JERSEYS with Official Records 1908 to 1921

We offer a small group of females, with an extra line bred, sired by our best show and bred-of bulls. Prices conform to the present day conditions—the best at a cheap price. Accredited herd.

MANNFIELD HALL FARM, VIRGINIA

FREDERICKSBURG

STEVENS HOLSTEIN FARM

of Cortland, N. Y., offers pure bred cows and calves, all age, extra high grade Holstein heifer calves, 20 each, express paid. In lot of 25, better calves with purebred bull calf \$75. Grade Holsteins come in railroad lots. Write me to meet you.

PAUL H. STEVENS, Prop., 223 Wellington Ave., Rochester, N. Y.

Rugged Producing Ayrshires

The herd has a strictly business atmosphere and they are bred for a maximum production of milk and butter. You'll be surprised at the size and quality of the milk.

CRESTWOOD FARM, SUNBURY, PA.

To Improve The Dairy Qualities

of your herd, get one of our fine bred, registered, and purebred bulls, with a few grade heifers, for free for 3 years. LIVESTOCK IMPROVEMENT CO., CHARLTON, MASS.

High Grade Holstein Calves

FRANK GALL, Pine Grove Farm, LOCKE, N. Y.

AYRSHIRE BULL calves for service. Modern, Accredited Herd. Advance Registry backing. Price to sell. Robt. Templeton & Son, Ulster, Pa.

RED POLLED CATTLE for sale. Write your wants or come and see us.

WAS. B. AVERY, KING FERRY, N. Y.

MILKING SHORTHORN BULLS, sons of Glen

Stamp, randoms of General Bull, at reduced price. C. M. Kennedy & Son, Ulster, Pa.

New Jersey State Sale

Trenton Fair Grounds, Trenton, N. J.

June 9, 1921

SELECTED

60 Holsteins 60

60 Selected Head

Outstanding Foundation

own. A show cow with 325 lbs. of butter in 330 days. A daughter of Spring Farm King Pontiac. Age 19-lb. two-year-old record.

Age 19-lb. two-year-old record. A daughter of King of the Pontiacs from a 24-lb. two-year-old. A daughter of King of the Pontiacs from a 24-lb. two-year-old. A daughter of King of the Pontiacs from a 24-lb. two-year-old.

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COUNTY NOTES

Wyoming Co., Pa.—Weather has been very fine most of the spring and season seems to be about two weeks earlier than usual. Some oats still to sow in localities where it has been very wet. April freezes damaged the fruit somewhat yet there seems to be more peaches than for some years back. Prospects are good for hay and oats. The labor situation is easier than last year, although wages are rather high in proportion to prices of farm products.

The long looked for Dairymen's League co-operative pooling plan began to function May first. It is a big undertaking and will no doubt disclose some weak places and probably need some corrections and changes but we feel sure it is a start in the right direction.

Farmers are awakening to the fact that they must do more than to simply produce more without any regard to whether or not they get cost of production. Also they are learning that they can organize and stick together when necessary and work for their own interests.—P. A. Valentine.

Washington Co., Pa.—Farmers are pretty well up with work, although the many rains of last ten days have kept many from planting corn. Oats are doing nicely and wheat is thickening up fast where there was any at all to stool. Some reports of fly damage. Pasture is good and meadows promise well but the next 30 days may change the outlook entirely. Some yellow spots in meadows, the result of cut worms and wire worms. Prices of farm products lower, but labor holds out for same old wage or more, and shorter hours. Their position is untenable and sooner or later they must give in or the non-unionists, a great majority, will in anger and disgust use a union weapon, boycott. Wool buyers get a few clips at 33 cents, but get orders to quit. Butter down to 35c, eggs stamped to 20c but are 25c now. A number of tractors sold in county this spring.—Bruce McNinch.

Carroll County, Md.—The orchard fruits are nearly all wiped out. Some few apples of late varieties are scattered here and there over the trees. The small fruits were not hurt. The prospects are for a large crop of strawberries. Currants, blackberries and raspberries appear to be normal. Wheat and oats are looking good. Most of the farmers have finished planting corn. A hard rain passed over the lower part of county washing corn fields badly. Pastures are on the whole in good condition. Potatoes, which were planted early, are a poor stand, a large number either failed to sprout or are dormant. Wheat is quoted at \$1.35 bu.; potatoes selling for 25c bu. Eggs are selling for 21c doz., while chickens, that is, old hens, are bringing 28¢ @ 30c pound; young chickens are bringing 40c lb. Calves are selling at 7¢ @ 8 cents a pound, hogs 9¢ pound while pork is selling for 25¢ pound. There is an over-supply of butter, prices ranging from 15 to 25¢ pound.—Harry I. Rinehart.

Mifflin Co., Pa.—Weather cool, a few wet spells which were bad for the corn that was planted but it is coming up. Lots more corn to plant yet. Wheat is looking well; grass not doing as well as some times. Some insect is destroying the clover in some fields. Some farmers have finished planting potatoes.—J. H. B.



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Your dealer will gladly explain wherein Essex duplicates costly car construction.

"I cannot imagine more abusive service—than I have given my Essex in 15,000 miles of prospecting work, in virgin, rocky country. Running as well today as when I got it. Two other cars in the same kind of service are 'shot'."

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"Have driven my Essex 16,400 miles. Had driven eight different makes of light cars, and none would last me a season. I drive a car hard—bad roads, all weather. Upkeep has been practically nothing. Its remarkable performance and the satisfaction it has given has led to many more Essex sales as I believe I have been instrumental in selling more Essex cars than any of your salesmen. I have never been bothered with squeaks or rattles."

A. I. BRUETT, A. I. Bruett Piano Co., Milwaukee

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"I have driven cars for the last 6 or 7 years. Cars, with me, have to do exceptionally heavy service, and this year will be the first I have ever used the same car for the second season, as I am doing with my Essex."

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With one turn—a clear fire

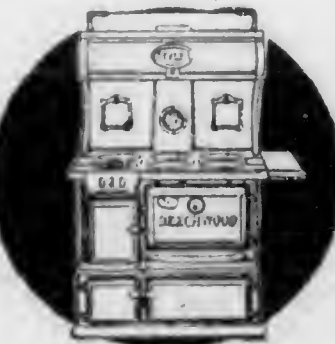
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Number 23



Rural Community Vocational Schools

Brief Description of What is Being Accomplished in Some of These Schools—By R. P. Kester

COMPARATIVELY few people out of the total population of the State are acquainted with the workings and the possibilities of vocational schools. If all school boards and parents of children could see such a school in operation and become personally acquainted with the kind of work the pupils do and see the progress they make, the demand for these schools would quickly swamp the Department of Public Instruction.



The Honey Brook, Chester County, Pa., Vocational School

It was the writer's privilege a short time ago to accept an invitation from Prof. L. H. Dennis, Director of Vocational Training in Pennsylvania, to make a tour with him and others visiting some of these schools in three counties. The visits were confined to Rural Community Vocational Schools, as those established in strictly rural communities or rural communities in co-operation with small boroughs are called. Many cities and boroughs have had Vocational Schools for some time, and while they are of equal value and interest it is in the schools which serve rural people we have greatest interest.

The first school visited was the one at Honey Brook, Chester County. This fine school was made possible by the co-operation of the borough of Honey Brook and Honey Brook Township. Previous to its establishment five years ago each supported a third-class, two-year high school in two buildings within a stone's throw of each other. This unsatisfactory condition led to the joint erection of the splendid building shown herewith. The grounds contain five acres and the whole is being developed into a beautiful as well as practical institution. Seven districts send pupils to the school which is composed of the seventh and eighth grades. All the pupils are receiving vocational training in addition to their academic courses. Twenty are studying and practicing agriculture.

The building contains a model kitchen, dining room, bed room and bath room and the girls are taught all the duties connected with the care and furnishing of them. The visitors thoroly enjoyed the splendid meal prepared by the girls that day. It reflected great credit to teacher and pupils alike. No part of the work of the school is more enjoyed by the pupils than that done in the shops. The practical work done in the wood-working and iron-working shops develops characteristics in the pupils which no amount of book learning alone could do. The teachers in this school deserve great credit for the work accomplished.

The next visit made was to the West Lampeter School, Lancaster County. Here, in one of the finest farming sections of Pennsylvania is one of the finest rural schools in the state. It is but due, in passing, to mention the undeviating loyalty of the most unusual school board in this district. Even in the face of the original opposition these men persisted in the development of

such a school as they felt should be established. Their success now brings them the deserved praise of their fellowmen. But one change in the personnel of the board has occurred in 16 years and that was occasioned by a member moving out of the district.

The pictures shown herewith will give some idea of the splendid building in which the school is housed; also the work and equipment of some of the departments. The high school was established ten years ago in which an abridged course in home economics was included. Five years ago a large addition was built and the school converted into a vocational school with a four-year high school course. There are 116 pupils enrolled, some of them coming long distances. The teachers are a live, capable bunch and are full of the right kind of enthusiasm. Special mention should be made of the unusual musical training pursued; two full-fledged orchestras are maintaining systematic instruction in scientific practices; and by developing skill in such handicraft as an experienced farmer would need. The purpose of homemaking education in secondary schools is to train for homemaking thru the actual performance of activities in the home. The courses are planned so as to enable the girls of 14 years of age or over to actually manage certain phases of the work in the home. They also aim to help develop in the girls a sense of their social responsibilities in the home, the school and the community.



West Lampeter Vocational School, Lancaster County, Pennsylvania

County, thirty miles back from the main line of the Pennsylvania and at the end of a one-horse railroad is Blain Vocational School. It is of a different type from the other two described above and yet it is most interesting because it shows what can be done in sections not so favorably situated as those first mentioned. The population is sparse and scattered, yet the accomplishments achieved during the few years this school has been established promise to revolutionize that entire section. No longer is it necessary for the young people to go away from home for education and entertainment, and what is more they are learning to appreciate the opportunities at home because they are becoming efficient farmers and homemakers. The work which the boys and girls are

doing in this school will compare favorably with that done in any other.

For financial reasons it was necessary to start this school in three separate buildings. Plans are laid for a new building sometime in the future, but at present an old school building is used for the academic courses, a new one-story building was erected for agriculture and wood working, and a dwelling house was bought and converted into a home-economics building. Blacksmithing is taught in still another building, the instructor being the village blacksmith and a most interested director. Every department seemed to be doing splendid work under inspiring teachers. The splendid dinner prepared and served by the girls in the home-making department proves them capable of making happy homes for somebody in the future.

General Information

The following information about vocational schools is furnished by the Department of Public Instruction:

The purpose of vocational education is to train for useful and profitable employment. The purpose of agricultural education in secondary school is to train pupils 14 years of age or over who have decided to follow some branch of farming. This purpose is accomplished by acquainting pupils with the vast store of agricultural knowledge and the methods of farming; by giving systematic instruction in scientific practices; and by developing skill in such handicraft as an experienced farmer would need.

The purpose of homemaking education in secondary schools is to train for homemaking thru the actual performance of activities in the home. The courses are planned so as to enable the girls of 14 years of age or over to actually manage certain phases of the work in the home. They also aim to help develop in the girls a sense of their social responsibilities in the home, the school and the community.

The instruction in both agriculture and homemaking is made sound and practicable by having each student carry on a project in the home or on the home farm. In conducting a home project the boy or girl proceeds thru the several steps. The pupils in agriculture select a type of project such as corn or potato growing, or poultry, pig or calf raising. The pupils in homemaking select such projects as the planning and serving of meals, the preservation of foods, or taking care of the family mending. All the information possible about the



Lunch Time at West Lampeter Vocational School, Lancaster Co., Pa. Lunch is Prepared by the Junior Home-making Girls (in uniform)

project is then acquired by reading and inquiring of successful farmers and home-makers. A plan of just what will be done at each stage of the project is made. The work is then done, keeping accounts meanwhile of all the business features of the project. Finally a report is made—lessons from practices and methods which proved successful are drawn, and the faults in methods which were unsuccessful pointed out. The home project is of value because it uses the school knowledge for actual production on the farm, or in the farm home, definitely tying up theory and practice. It is knowledge successfully applied; it is learning by doing.

Types of Schools

Instruction of this kind is provided in Pennsylvania in three types of public high schools. All are under the direct control of local boards of school directors. The difference between these schools and the regular high school, not providing vocational courses, is that the State and Federal Governments provide additional funds for vocational instruction. The types of schools just referred to are as follows:

- 1—Rural Community Vocational Schools.
- 2—Vocational Departments in High Schools.
- 3—Local schools for instruction by county vocational supervisors.

Rural Community Vocational School

These schools are located at centers in the community and serve the distinctly rural population. Vocational work is offered for both boys and girls. They are called vocational schools because all pupils enrolling in them for instruction enter either the agricultural or home-making course for two years. In these first two years, the pupils spend one-half of each day in academic studies, such as English, civics, history or science, and the other half day on vocational studies, such as farm crops, animal husbandry, poultry or farm shop for the boys, and cooking, dressmaking, household accounts or home nursing for the girls. During the last two years of the high school course the pupil may elect the full academic course or may continue the former schedule with more advanced vocational work. The growth in the number of these schools has not been spectacular but it has been steady, as is indicated by the following record.

Year.	Schools.	Boys.	Girls.	Tl.
1916-17	17	795	531	1236
1917-18	23	852	775	1627
1918-19	23	716	717	1433
1919-20	28	847	1045	1892
1920-21	37	1030	1370	2400

During these five years no vocational school has been discontinued. Instead each has grown very rapidly. After being changed from a small high school to a vocational school, the increase in enrollment has been quite marked.

Many more requests have been received each year from school boards for permission to organize Rural Community Vocational Schools than could possibly be granted by the State Department of Public Instruction. Many districts are planning to organize vocational schools in the near future in connection with the consolidation of their schools.

Rural Community Vocational Schools 1920-1921

Adams Co., Arden; Allegheny Co., Imperial and Liberty; Armstrong Co., Dayton; Beaver Co., Darlington; Berks Co., Leesport; Blair Co., Martinsburg; Bradford Co., New Albany; Butler Co., West Sunbury; Center Co., Spring Mills; Chester Co., Avondale, Cochransville and Honey Brook; Columbia Co., Benton; Crawford Co., Conneautville, Spartansburg and Townsville; Dauphin Co., Berksburg; Delaware Co., Broomall; Erie Co., Waterford; Huntingdon Co., Petersburg; Indiana Co., Elders Ridge; Jefferson

Co., Beechwoods and Corsica; Lancaster Co., Lampeter and Reamstown; Lawrence Co., New Wilmington; Luzerne Co., Trucksville; Lycoming Co., Picture Rocks; Mercer Co., Fredonia; Mifflin Co., Belleville; Perry Co., Blain; Schuylkill Co., Reinerton; Susquehanna Co., Harford and Dimock; Wayne Co., Ariel and Newfoundland; Washington Co., Centerville and Hickory; Wyoming Co., Mill City.

Interesting Facts Relative to Vocational Schools

Number of Districts Operating Vocational



Wood Working Shop in Honey Brook School

Schools 1919-20: 17 schools operated by one district each; 8 schools operated by two districts each; 2 schools operated by three districts each; 1 school operated by four districts each. Total—28 schools operated by 43 districts.



Made by the Boys of the Blain School

Note—Where two or more districts form a joint board to operate a vocational school, this school is known as a "Joint Vocational School." An extra appropriation of \$500 annually is granted to Joint Vocational Schools.



Girls in Home-making Department of the Blain School

Pupil-drawing power of rural community vocational schools of the state:

Year.	Percentage resident pupils.	Percentage non-resident pupils.
1916-17	48	52
1917-18	51	49
1918-19	53	47
1919-20	44	56

During 1919-20 there were 28 Rural Community Vocational Schools located in 23 counties with

a total enrollment of 1045 girls, 881 of which number were enrolled for home-making courses and 847 boys, 704 of which number were enrolled for agricultural courses. It is interesting to note that of the 219 junior girls who were in the 23 Rural Community Vocational Schools (the five new schools not having juniors enrolled) 154 elected to continue in vocational home-making courses and only 66 transferred to an academic course. On the basis of percentage, 70 per cent elected to continue in the home-making course. Of the 115 junior boys, 75 or 65 per cent, elected to continue in vocational agricultural courses.

A number of boroughs and towns desirous of giving their pupils the benefits of instruction in vocational agriculture and home economics organize departments in their high schools. Such organization involves chiefly the employment of properly qualified teachers and the provision of the necessary equipment.

Agricultural Departments

The vocational work in the agricultural department is conducted in much the same manner as in Rural Community Vocational Schools. Similar classes are taught and home projects supervised. As in other departments of a high school, pupils have the option of electing the vocational course. Pupils choosing the vocational course, enroll for two years. At the end of the two years they may take another course or continue the vocational work for two more years. The course of study in an agricultural department is the same as the agricultural course in a Rural Community Vocational School.

Vocational Departments of Home-making

The work in departments of home-making is also accomplished in much the same way as in the Rural Community Vocational Schools. In the classes in cookery, the girls learn to plan, prepare and serve well-balanced meals; to do the family baking; to make a study of food materials and their uses in the body. Classes in sewing, laundering, home nursing, household accounting and many other phases of home-making are included in the courses.

The school lunch which features in many of our rural schools furnishes a legitimate outlet for the cookery classes and at the same time provides an opportunity for the girls to do family quantity cooking. There are at present 14 departments of vocational home-making located in twelve different counties. There are 347 girls enrolled in these departments.

County vocational supervisors are country representatives of the Bureau of Vocational Education of the State Department of Public Instruction. In this capacity they have full charge of the county programs of agricultural and home economics instruction for all boys and girls of school age. They are attached to the staff of the County Superintendent of Schools and are located in the office of the County Superintendent. They receive their salaries and necessary traveling expenses from state funds.

There are at present 13 County Vocational Supervisors of Agriculture located as follows: Pittsburgh Allegheny Co.; Bellefonte, Center Co.; West Chester, Chester Co.; Clarion Co.; Bloomsburg, Columbia Co.; Meadville, Crawford Co.; Carlisle, Cumberland Co.; Harrisburg, Dauphin Co.; Williamsport, Lycoming Co.; Sunbury, Northumberland Co.; Coudersport, Potter Co.; Washington, Washington Co.; Greensburg, Westmoreland County. Three county vocational supervisors of home economics located as follows: Pittsburgh, Allegheny County; West Chester, Chester County; Bloomsburg, Columbia County.

Seeing is believing. Exhibits of actual work done by vocational pupils is convincing. It is even more convincing to see these boys and girls actually at work; to talk to their teachers; and to see the schools they attend.

Sunlight In the Farm Home

SUNLIGHT banishes disease and tones the family morale. It is always safe to build facing the sun. It is frequently unwise to ignore it. A little observation proves this. In a country village built at a cross-roads so that its streets ran north and south and east and west, those houses which faced south or whose living rooms were freely reached by the sun housed families whose health was generally good, except in a few instances where inherent disease seemed to yield to the favorable conditions. On the contrary where no advantage was taken of the sun and the living rooms were not reached by it to any extent and the bedrooms dark and shaded, the only cases of tuberculosis the village had known in years, occurred. Likewise people afflicted with tumors were found under these conditions.

In a normal country region, of twenty farm homes selected at random, those whose most-used family rooms were well supplied with sunlight show their inmates healthy or attaining health under those conditions. On the contrary, those who

the other hand where the family has for several generations tolerated low dark bedrooms with narrow, under-eave windows moving from old quarters into others of much the same type, a distinct tendency to disease has been noted, cancer and tuberculosis or abnormal growths have been the family heritage. Hereditary carelessness may be more dangerous than hereditary disease.

The above comparisons were made in a region where standards of living are high and climatic conditions usual, economic conditions being uniform so that the families compared were not suffering from sub-normal nutrition or any other cause.

The most used rooms of a house are living-room, dining-room, kitchen and bedrooms, of which the bedroom is not least important. To spend eight hours of every twenty-four in a dark, stuffy, poorly ventilated bedroom must lessen the benefit of a healthy outdoor life thru the day for a man. What of the women members of the family who have to spend hours in darkened or poorly ventilated rooms? The housewife



A New Jersey Farm Home. This shows how a Living Room was given Additional Light by the the Window Extension

homes were built or used with no regard for this principle—the family living on the dark side while the sunny rooms were darkened and kept as guest-rooms or parlors or where the house was heavily shaded by trees, there have occurred cancer, tuberculosis or cases of debility or anemia, one or the other of these in every instance where the unfavorable condition existed.

In one community two houses of precisely the same plan were built, neat, attractive and well lighted with the difference that one faced the sun and the other did not. In one house lived invalids—the house that faced the sun—and their condition improved. In the other normal healthy people took up their abode. They suffer much at the present time from colds and coughs and are pale and anemic looking. One family is as cleanly in its habits of living as the other and as well-nourished, the only advantage that one has over the other is the presence of the sun. Moreover, some families have for generations demanded certain requisites in their home structure while others have allowed themselves to be housed indifferently. Where the spacious, well-lighted, airy houses have been favored, sons following fathers in this type of building, the family constitution is good, the members of good physique and disease resistant. On

spends so much time in the kitchen that this room should be as bright and sunny as possible. Housewives who work in dark kitchens are usually pale and nervous.

For every 2000 cubic feet of space in a room facing south, there should be at least 50 square feet of actual lighting space in the windows. If the room is a northern exposure, this lighting space should be increased to seventy-five or one hundred square feet. Many object to more windows on the colder side of the house, but where there is less sunshine there is more light needed if health is to result.

Porch-shaded rooms on the first floor must admit more light by means of larger or more windows than upper-story rooms.

Closing blinds and heavily shading windows to save rugs and furniture is not economy of human life but a tacit invitation to the undertaker.—M. R. C.

Health is one of life's greatest assets for success; good health squandered is sheer waste of efficiency and happiness.

So much to do in the spring that it seems there is no time to get out in the glorious sunshine. But you owe it to yourself and to your family to keep fit.

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Cauliflower .45 100 500 1000 or more
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Leading Varieties Catalog free
C. E. FIELD, SEWELL, New Jersey

Hardwood Ashes spoiled to measure, \$2.00 per ton, delivered by Peterborough, Ontario

THE NEW DOG LAW

Entire supervision of the enforcement of the licensing of dogs in the State of Pennsylvania will rest with the State Department of Agriculture, after January 15, 1922, under the provisions of a bill just signed by Governor William C. Sprout.

At the present time the commissioners of each county are charged with the enforcement of the dog license law, with mild supervisory powers vested in the Department of Agriculture. At the behest of the state organization of County Commissioners, the Pennsylvania State Sheepbreeders' Association and other agricultural organizations, the new law was introduced and passed at the recent session of the Legislature. The county commissioners of the state, along with the agricultural organizations, felt that the law could be more thoroughly enforced if placed directly and entirely in the hands of the Department of Agriculture.

Under the new law the Department of Agriculture will issue the license tags and blanks to the various county treasurers who will issue the same. A uniform license fee of \$1 for male dogs and \$2 for female dogs is fixed by the act, while an additional fee of ten cents is provided to compensate the county treasurer for his work. Assessors are also allowed five cents per name for the return of the names of dog owners in their districts, but the latter fee will be paid from the general dog fund.

The act of 1921 also provides that the state shall pay from the dog fund all losses for poultry and livestock killed or injured by dogs, also these amounts may be collected by the state where ownership of the dogs committing the depredations is established. The Department of Agriculture is entitled to a representative on the board that fixes the indemnities.

The actual enforcement of the dog law still remains in the hands of the constables and peace officers, but the Secretary of Agriculture is empowered to employ such help as is required, to see that the law is properly enforced in every section of the state. The funds derived from the license fees are paid into a state fund and from this fund the cost of enforcing the law, supplies, such as tax blanks, etc., are paid, while indemnities are also paid from this fund.

A dog owner, under the act of 1921, is responsible for the dog, as under the act of 1917 and full powers are conferred upon the proper authorities to see that the owner, and not the life of the dog, pays for the owner's negligence.

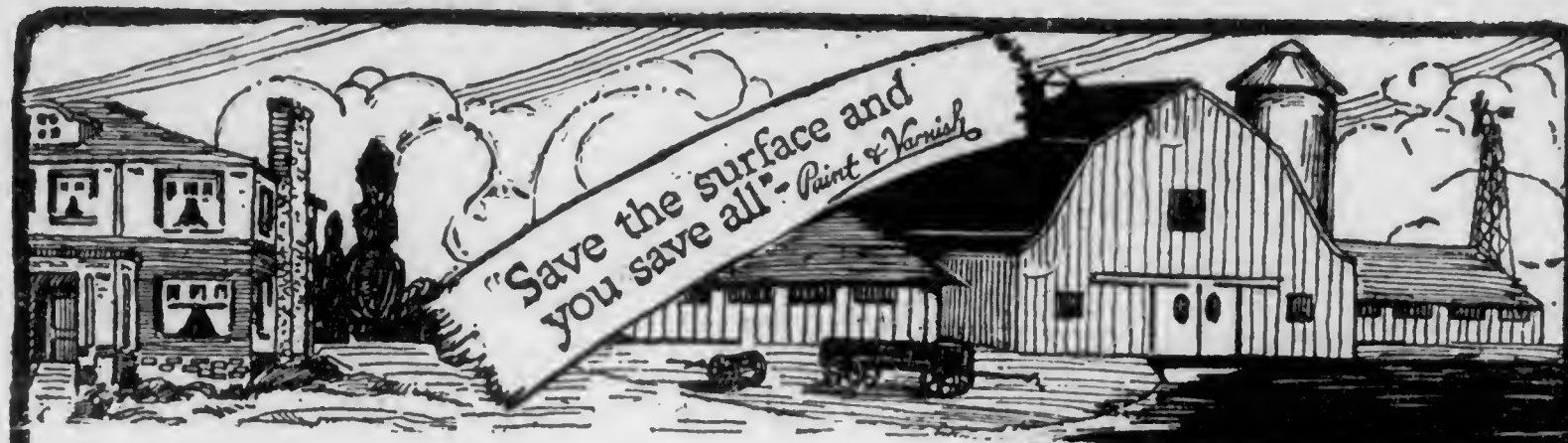
Good Advice

"This—uh—glub—spaghetti is awful—loh—gloh—slippery stuff!" complained a customer in the rapid-fire restaurant.

"Ad, don't try to eat it with your knife!" briskly said Heloise, the waitress. "Catch it by the tail and reel it in."

You can't start forests from stumps. If we are to have timber in the future, we must grow it as systematically as any other crop.

One bird man declares that insects make up two-thirds of the food of the birds. Yet some farmers still think that birds are their enemies instead of friends.



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"Get the jump" on dirt, flies and other insects that are detrimental to a first class job of painting later on.

The idea that paint is used only for appearance, is common in many localities. Paint improves the appearance of buildings and implements, but it is even more important that it be used to prevent deterioration. The high price of lumber makes it clear that the life of the buildings should be given more attention than when material and labor were less expensive.

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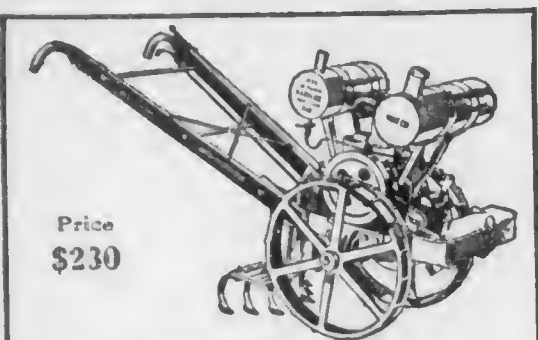


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VOLUME 49 NUMBER 23

OUR JOB is to serve our readers. Whenever you are puzzled, write to us and we will help you if we can.
—The Editors

True Glory lies in the silent conquest of ourselves.
—Thompson

Pennsylvania's Seed Law

THE SEED LAW passed by the last Legislature is the best seed law in the Union, according to Secretary Rasmussen who has made a careful study of the different state laws on this subject. The farmers of Pennsylvania are fully protected in the purchase of seeds, and the unscrupulous houses which have been dumping stuff labeled "Pure Seed" will have to find a market elsewhere.

The law does not attempt to grade seed but provides that it shall be labeled so that the buyer may have full information as to the contents of the package. He can then use his own judgment. Full information must be given on the following points: Common name, per cent of pure seed, per cent of weed seed, the name and number per ounce of noxious weeds, the per cent of germination, and the seller's name and address. Seeds containing dodder and Canada thistle, even to a small per cent, are prohibited from sale, and seed containing more than 3 per cent of any other weed seed is prohibited. Exceptions to the labeling clauses relate to small amounts of seed, and to seed that is to be reseeded before being sold for seed purposes. The law provides for injunctions to prevent the sale of impure seed.

Local Option on Daylight

ALTHO the State Legislatures have refused to enact so-called daylight-saving laws, and it is believed that Congress will not do so, many cities and smaller corporations have adopted daylight-saving for themselves. In so far as the action affects only those who want it they may have it and welcome. But it does not stop there. Tens of thousands of workers in town and city are opposed to the plan, but they are the plain people—the people who go to work early in the morning and their influence on law-making bodies is slight. The surrounding rural sections will also be affected more or less. Local train service is to be adapted to city time and this will necessitate change in the social and working customs of contributing sections. City papers realize the handicaps arising from the dual time plan, but they lay all the blame upon the opposition of the stubborn farmer. One paper intimates that since the Department of Agriculture has successfully reorganized agriculture during the past generation and brought it up to date it could, if it set itself to it, teach farmers how they could farm successfully by the daylight-saving plan. They will have to go to a higher and more omnipotent authority than the Department for that information. It will require a re-

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peal of some of Nature's laws and the amending of others so that the action of the sun and the dew and the hired man will conform to the man-made plan.

To Be Investigated

AGRICULTURE is to be investigated by Congress according to present indications. A concurrent resolution introduced proposes a joint commission to inquire into the present unhappy condition and to propose remedies. It is perhaps not fair to anticipate the results of such a move, yet we cannot help remembering the outcome of innumerable other investigations, and smiling. If, however, the investigation is honest and thorough enough to convince Congress and the public of the necessity of certain legislation which will permit farmers to help themselves it will not be in vain. We have always believed that the public will grant justice to any class of people once it is convinced of what is justice and right. It requires a great deal of publicity to establish a fact in the public mind and farmers themselves have not been able to do it in regard to their needs. Perhaps the publicity that will develop from such an investigation will put it over. It may help to counter-act the influence of a lot of stuff that is being published in certain papers and magazines, in one instance under the heading, "The New Menace." This propaganda tends to create the belief that the present farmer activities, and the passage of laws they are demanding, threaten the public and the national economic structure. Let us hope that Truth will prevail at the investigation.

The Other Fellow's Turn

CONGRESS has finally passed the Emergency Tariff bill introduced at the request of farmers. From the beginning, we have doubted the wisdom of demanding this legislation because we do not believe it will provide a remedy for the unsatisfactory market conditions in this country, and also because it gives every other industry a criterion for demanding high duties. Already we have indications that this belief was well founded. The passage of the bill has not yet arrested the steady decline in the price of farm products. The little flurry in wheat which occurred last week was due to the scare produced over reports of unfavorable weather in the Southwest. Giving the farmers what they asked for encourages the representatives of other industries in Congress to press the claims of their constituents for much higher tariff duties. In some instances demands are being pushed for rates higher even than those of the Payne-Aldrich bill. We firmly believe that every country may properly lay such tariff duties as will fairly equalize production costs which are normal and fair, but it is suicidal to force prices too far above the world's price-level.

There is urgent need for tariff revision at this time, but it should be a scientific revision made after a careful inquiry into the necessities of the case as viewed in the light of our changed international relations. It is not a safe practice to allow each section or industry to dictate the making of its own tariff schedules.

Favorable Progress

THE DOWNWARD movement in prices continues in most lines. The temper of the buying public improves in proportion and goods are moving at a somewhat faster pace than for several months. This is a good indication and if deflation continues it would seem that the so-called buyers' strike would be "off" before long. Retailers are finding that reduced prices are the only thing that will induce the public to buy beyond the merest necessities.

One big business man said recently that the farmers' buying power was the only thing that saved us from experiencing a much worse condition than we have had during the past six months. The farmer's business is so big and his needs so great that, even if restricted to necessities, his purchases amount to hundreds of millions of dollars in a single season. Even if the sale of his products returns little or no wages for himself and family, still the aggregate amount received is so great that it contributes mightily towards keeping business going. As new crops

having lower production costs are sold the farmers' buying power will increase and we may expect increasing contentment and prosperity on the farms.

No other business requires such a variety of manufactured products as does agriculture, for the business of farming includes the home and the maintenance of the family as well as the operations in field and barn. Successful farming requires the purchase of everything from a paper of pins to costly and intricate machinery. For this reason the upkeep of a business engaging forty million people is by far the biggest thing in the nation, and since it cannot be run intermittently it is the natural balance wheel of business. The farmer is, by virtue of necessity, a liberal spender and he is likely to get back to normal buying first of all.

Trim the Roadsides

GOVERNOR SPROUL vetoed the bill passed by the last Legislature which required that all owners of land abutting on public roads must cut all grass, briars and weeds growing along the roadsides. The bill provided that, in the event of the failure of owners to do so, the supervisors should do it after the first of September and charge the cost against the land owner. The Governor holds that it is wrong to compel farmers to do a very substantial amount of work for which there is no compensation in addition to paying his share of tax. It is a sensible exercise of the veto power and farmers will approve.

The best farmers of the state do this work voluntarily because it adds to the appearance of their properties besides tending to eradicate weeds which spread to adjoining fields. The state has control over all the land embraced in the right-of-way of public roads and road commissioners have charge of it. If the rubbish growing there tends to the accumulation of snow as the bill declares it is the business of road supervisors to cut the trash. However, we approve of the voluntary work done by farmers because it adds much to the appearance of a farm to have trim, neat roadsides.

Our Washington Letter

Federal aid for highway construction and the Cummins railway investigation are the two outstanding matters before the Congressional committees this week.

General Pershing was a leading witness before the Senate Post Roads Committee, which is considering the Townsend Federal road bill. Basing his statements on his observations in France, General Pershing said he thought a Federal highway commission, such as is provided in the pending Townsend bill was necessary to unify the various state highway projects into one continuous system. He declared that money appropriated to build roads for which maintenance was not provided was wasted.

Discussing the question as to whether Federal money ought to be spent on trunk lines or on so-called farm to market roads, General Pershing said: "All roads must lead to the farms. The farmer is the fellow to consider first. We all know how difficult his problems are. I would begin with the county roads and develop together a system of market and trunk highways."

Recently Professor T. C. Atkeson, Washington representative of the National Grange, sent out a questionnaire to highway officials in all the states, on the policy of the state highway departments regarding Federal aid to highways. Some interesting information is found in these replies.

The New York state officials write: "We are confining the expenditure of Federal aid funds to a definite system provided by law, which contains 11,225 miles, the total road mileage of the state being approximately \$0,000."

In Pennsylvania, the state officials say, "the expenditure of Federal aid funds is confined to a selected system of inter-county and state roads. The total mileage of the state highway system in Pennsylvania is 10,235, which is between nine and ten per cent of the total mileage of road within the limits of the state."

Some of the state authorities say they are opposed to Federal aid in constructing market or county roads. The answers show that from three to seven per cent of the highways in the different states are improved.

If one man had purchased all the wheat grown in the United States at the October price from 1853 to 1920, and had sold it at the May price each year, his total gain would have been about seven per cent as the return for caring for the grain seven months. This conclusion is based on

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an investigation of the Chicago grain market reports covering the past sixty-two years, made by Professor Atkeson, in which he finds no evidence that speculators have systematically forced up prices after the crops have passed out of the hands of the producers. Considering the interest on the investment in holding the grain and shrinkage in weight, Professor Atkeson figures that it would have been better if the farmers had sold their wheat at the October price. He believes that this investigation completely answers the claims that the price of wheat is forced down artificially when the farmers have the grain to sell.

The railroad investigation is being conducted before the Interstate Commerce Committee of the Senate, with the railroad officials dividing the blame for the present situation between the high wages they are compelled to pay for labor and the mistakes of the government railway administration during the war period. They are insisting that the rates cannot come down, and that the government should reimburse the railroads for losses that are piling up under the present high freight rates. There is a strong and growing sentiment in Congress that railroad rates must come down. The contention of Daniel Willard, president of the Baltimore and Ohio Railroad, that "the services of the railroad are rather more than the service of the tree or the packing of the apples, where nature does most of the producing," is not convincing to the Senator who has just received a letter from a constituent, saying that he had shipped several hundred barrels of apples from his orchards to market, and had only seven cents a barrel left after paying the freight charges.

The railroads may prevent the passage of a bill calling for the repeal of the section of the transportation act directing the Interstate Commerce Commission to make rates which will assure a return of six per cent to the carriers, but it will require a hard fight in Congress. There is very active opposition in Congress to perpetuating the cost-plus scheme, whether it applies to government contracts or transportation.

The Senate banking committee has made a favorable report on the bill to increase the rate of interest on farm loan bonds from 5 to 5½ per cent.

The status of the Capper-Volstead farmers' collective bargaining bills is a source of anxiety to the farm organization representatives. The Volstead bill, which passed the House, was referred to the Senate Judiciary Committee, and it is believed that this committee will not report favorably on the bill without the amendments which were so objectionable to farmers that were added to the former bill.—Elmer E. Reynolds.

HARRISBURG LETTER

Must Plan Work Again.—Such tremendous cuts were made in appropriations for various departments of the state government by the Governor that it will take a week or more for some of them to readjust their plans. In several instances heads of branches of the government appeared to be laboring under the idea that they were going to get more money than ever and did not cut down their projects. Others took notice of the situation and will be ready to face the conditions. The Department of Agriculture and Forestry are two which will be in good shape to go ahead. The former department will have to curtail considerably its field work and also to give up some branches of inside activity in the way of investigations, while there will be abandonment of plans for expansion of the Bureau of Markets. Farmers Institutes have been given up, no appropriation being made. It has been calculated that the work of State College has grown so much that this line of educational activity can be taken up in other ways. The Department of Forestry gets no money for purchase of lands, but the million dollars asked to organize a fire fighting service which will protect what the state owns went thru without a cent being taken off.

Tremendous Cuts Made.—The Governor surpassed all records for reduction of appropriations, probably a score of millions being cut off the bills. It is reckoned appropriations aggregating \$116,000,000 got by, the hospitals and homes

which should be supported by their home communities getting the usual share of the public funds. The revenues will run probably \$120,000,000 if the state realizes on the anthracite and gasoline taxes in time to count them in. Lawsuits on both are threatened. Half of the gasoline tax which is collected in each county will go back to that county for use on roads or in payment of highway obligations. There

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have been reports for some time that the State might not get the use of money hoped for until next year. Some investigations of the condition of the balances has also been in progress and it is possible that more may be known about the actual financial condition of the Commonwealth before the end of summer than has been known for a decade or two. Complaints about appropriations have directed attention to State finances at a rate which is unusual and as large bond issues are to be made soon this interest in the Commonwealth's affairs may grow.

State College Hard Hit.—State College suffered a reduction of a million dollars in its appropriation, the building appropriation being cut about \$600,000 while the general extension work allowance was also curtailed. It is said here that state authorities are counting on more Federal aid.

To Continue Commission.—The State Taxation Commission, which drafted the code for cutting cost of collecting taxes in half and which

consist of a dozen members and exercise wide influence.

To Battle Pests.—Arrangements have been made by State authorities to combat the Japanese beetle and gypsy moth, both of which have been reported in this state. Co-operation with Federal authorities has been arranged.

State Money Refused.—One of the oddest vetoes has been recorded at the Capitol. The Governor in disapproving an appropriation for a Philadelphia institution said he had been asked to do so by the people in charge of the hospital who said it was too small and would discourage contributors.

Grant Eminent Domain.—The Governor has approved bills giving electric companies the right of eminent domain, which means they can take land for pole lines. However, application must be made to the Public Service Commission, which must give hearings and the right of appeal is safeguarded.

NEW YORK LETTER

Dean Mann Loyal to Present Position.—Dean A. R. Mann, of the State College of Agriculture, has declined to accept the appointment as State Commissioner of Agriculture, as he deems his present work of great importance to agriculture. The next choice will be Mr. Raymond Pearson or Mr. George E. Hogue, both of whom have served before in the office.

Radio Market News.—The State College of Agriculture is soon to receive daily market news by radiophone and will relay it to shipping stations and to farmers who desire the service. The news reaches the final destination in English instead of in dots and dashes and is fresher, arriving at a more practical hour of the day than the old service gave.

Valuable Holstein.—A Sharon farmer has a purebred Holstein heifer that has born six calves, and is still in her third year. The last ones are twin heifers.

Wool Rebate.—Few farmers of the state have as yet received their rebate from the government on wool sales made during the war. One wool grower reports receiving his, amounting to 14 cents. The rebate is not expected to in any measure balance present low wool prices.

Calf and Heifer Clubs.—The sale of club calves to junior project workers of Tompkins County was held on Saturday. Only eleven juniors signed to work with calves as compared to 18 last year. A heifer club and later a dairy cow club will be organized to keep up the interest of contestants from year to year. With this year's calf one boy who entered last year for the first will have four purebreds, earned in this way. The plan leads often to the replacing of scrubs with purebreds on the farm where the juniors reside.

For Cattle Indemnities.—New York dairymen who have worked for sufficient Federal appropriations to cover indemnities for cattle condemned because of tuberculosis are interested to know that due to their Congressman W. W. Magee they are likely to get the full amount demanded, \$405,000.

Trade Mark Eggs.—Four communities of Tioga County will unite to market first-class eggs, bearing a county trade mark. They will also hold poultry culling demonstrations and will stage a big poultry exhibit at the fair. Certification of flocks will be pushed next spring and the distribution of eggs from certified flocks.

Low Average of Disease.—In the county area work of freeing Tompkins County cattle from tuberculosis but 9.5 per cent of the 626 animals so far tested have reacted, speaking well of health conditions in that county.

Onion Loss.—Over 10,000 bushels of onions were thrown on dumps or plowed under last week in the Fulton onion growing section, as there was no market. This seems a pity with onions retailing at about the usual prices—and proves the need of co-operative marketing methods. Grower distribution of food crops. Early cabbage prices in New York took a slump this week, due to the arrival of 75 carloads in one day.

Frosts Do Further Damage.—What small fruits escaped the early frosts were ruined in the big freeze of last week in central and northern counties. In Oswego County thousands of bushels were lost.

Governor Pleaded.—Besides reorganizing all state departments so they will render more efficient service the Governor's plan of expense elimination has saved the state \$15,000,000 as compared to last year's expenses. Practically never has the Legislature done more practical work than this year, proving the value of strong right leadership.

Annual Holstein Meeting.—On May 31 the delegates to National Holstein Breeders' Ass'n met on the State Fair grounds at Syracuse. The greatest sale of this body is staged for June 2, 3 and 4.



Dress and Tam Made by Junior Girl in West Lampeter Vocational School

The legislators declined to consider on the ground of too much disturbance of conditions long established, has been continued for another two years and charged to make a report to the next Legislature. Efforts will be made to overcome objections in certain features of the code, but the disposition of members is still to get rid of many officers and thus cut costs.

More Road Contracts Let.—Contracts for highways running into the millions in the aggregate have been let by the state the last few days and probably 700 miles will be in course of construction during the year. Start of highway work has relieved the unemployment situation in many sections of the state and men are traveling miles to get jobs.

School Law Changes.—It will take weeks to get digested and prepared for general use all of the changes made in the school code. The law during the coming term and fourth class district officers will receive word as to the expectations of the State authorities. Incidentally, general educational authority has been concentrated in a State Council of Education, which succeeds the State Board and various other bodies. This will



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HORTICULTURE

Fruit Crop Prospects

By J. P. STEWART

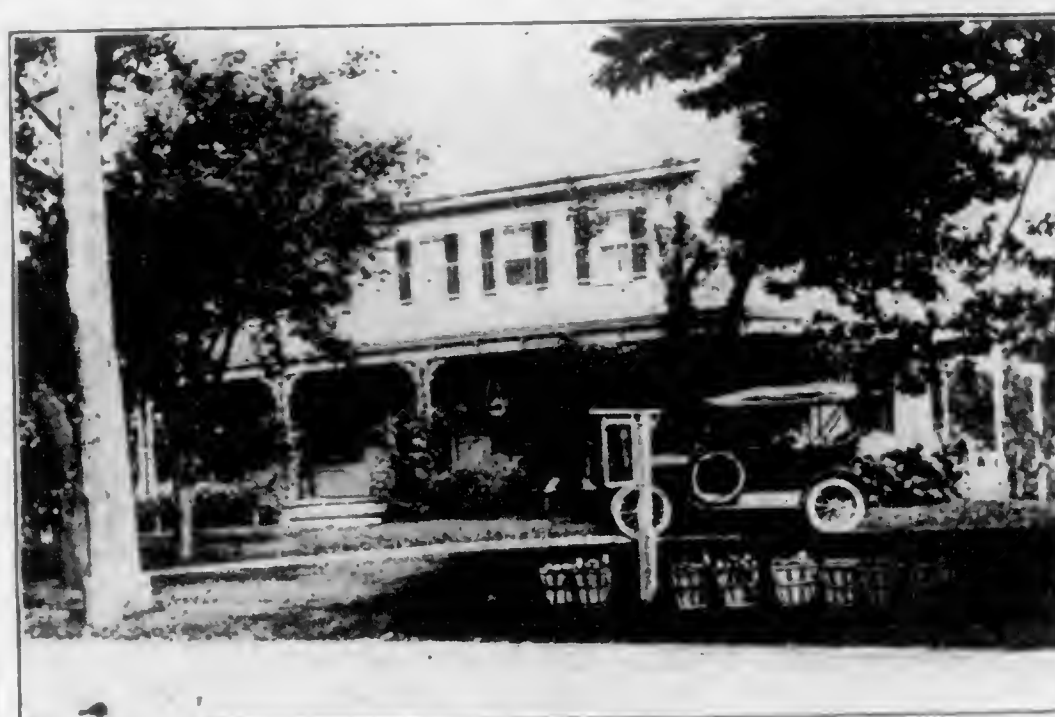
IT SEEMS that the farther we go into the present season, the more certain it becomes that the fruit crop in general is going to be very light. Orchards in the more northern sections of the general eastern apple belt, which had largely escaped the earlier freezes, and upon which we were depending for the most of our fruit this year, had their session with the frosts on the 16th and 17th of May, with very unfortunate results so far as the stone fruits at least were concerned. The apples were also hit pretty hard in many places by this last reminder of winter, but just how great the final reduction on this crop will be, cannot be told at present.

Recent reports from the Ozark region, of Arkansas, Missouri, and southern Illinois, indicate that their fruit was practically all wiped out by the same freezes, in the latter part of March and two weeks later that played such havoc with the orchards of southern Pennsylvania,

be successfully met by making arrangements for a "long pull" on the best storage stock. Incidentally, it should be noted that it is chiefly the yellow Newtowns or Albemarle that are bringing the high prices in barrels just now, and the old Ben which should be coming into action at this time is still quoted at very modest figures.

Developments in Spraying

Good Staymans and Spies can be kept in good shape until the middle of May under the best storage conditions, but it is probable that more attention will have to be given to the prevention of scald, especially on the Stayman, before such an attempt could be made safely. The use of ventilation and ventilated packages in the storage room is likely to be important in this connection, and even wrapping some of the fruit with the special wrappers recently suggested by the Federal Bureau of Markets may become worth while.



A Modest Roadside Market in New Jersey

Ohio, and southward, this year. This included even the strawberries in Arkansas, which are reported to have been nearly wiped out. This fact is probably now being reflected in the abnormally high prices which strawberries are bringing in the cities, although freight rates and the ubiquitous middlemen are doubtless doing their share.

The prices of apples also have been mounting upward recently, especially in the New York market where \$4 to \$6 for a bushel box is not unusual, and \$10 to \$14 per barrel for varieties of good quality is becoming quite common. Many of the other markets have not yet been shaken loose from their \$4 to \$6 per barrel quotations, but they will probably fall into the procession when their local supply begins running short.

Profits from Storage Fruit

The appearance of these prices at this time is worth remembering on the part of those who may be going to store apples another year. It is not likely that we will have another crop soon, which will take until the middle of May to get the cheap stuff out of the way, but it is worth noting that even such conditions can

royalties to a certain California firm which now levies such tribute on practically all the lead arsenate that is now being made thruout the country. This should enable the present owners to put out their product at least as cheap as any of the other forms, and probably even cheaper.

This material has been out in a small way for a couple of years but this is the first season that the writer has seen it used regularly on a large scale, and from the way it is behaving now, it certainly deserves consideration in making out our next order.

The new type of dry lime-sulphur is being made by simply shooting the liquid concentrated in a fine spray into the upper part of an evaporation chamber, whereupon it promptly loses its excess moisture and drops in a very fine solid form to the floor of the chamber. This is supposed to yield a lime-sulphur in dry or solid form, which is 100 per cent pure and which will re-dissolve when added to water to a much greater extent than any of the other dry lime-sulphurs now on the market. Whether this latter assumption is correct or not can be determined later. If it is correct, it will undoubtedly fill an important gap in the present line of commercial spray materials. The true lime-sulphur in dry form is undoubtedly the best possible material from the commercial viewpoint, but the solubility of such forms of this material as have come to the writer's attention up to this time has not been sufficient to command full approval. Whenever this fault can be remedied, however, the commercial lime sulphur problem will be solved.

SPRAYING CUCUMBER VINES

On the platform of the railroad were piled fifty or sixty hampers, and being curious I examined the contents and found the packages contained cucumbers which were being shipped to a New York commission man. Looking at the shipper's name it was quite a surprise to note that it was a man of my acquaintance.

Coming by the railroad station several days later I saw this man unloading twice as many hampers of cucumbers as he had unloaded on the previous visit. As none of the neighbors had yet started picking their patches it seemed as though this man had stolen a march on them. On remarking this to him I asked him by what means he obtained his cucumbers so early. "By spraying and seed selection." When I asked why he had not mentioned seed selection first he told me he considered spraying as paramount, and very careful spraying at that.

Then he told me the history of his father a trucker on Long Island. One of their main crops was cucumbers. The family began to put a larger acreage in every year and made good money. Then disease came, blight came every year and struck the crop earlier until it was impossible to grow a crop that would even pay expenses. His father decided to move to a new farm in another state. At this time the various experiment stations were doing all in their power to help the growers, and then the discovery came of the helpful effect of Bordeaux mixture to retard the blight. His father was one of the first to adopt the practice of thorough spraying, and it has been so firmly fixed in the mind of the son that he carries on this operation of spraying so that it is almost impossible for his plants to become diseased or

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THIS year it will not pay to take chances. It is not a safe season to do any experimenting with poor twine. Do not be satisfied with any but the best. Buy the twine that has long been considered standard and found completely satisfactory—the old reliable McCormick, Deering and International. These International Harvester twines have the efficient binding qualities woven into them. They will add much to the success of your harvest. Visit the International Dealer.

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this new method of bleaching celery, which is far cheaper than boards and much cleaner than bleaching with dirt. Areandee Celery Bleacher keeps celery clean and bleaches it perfectly. The stiff strips of waterproof material may be applied by two men at the rate of a mile of row per hour.

Areandee Celery Bleacher

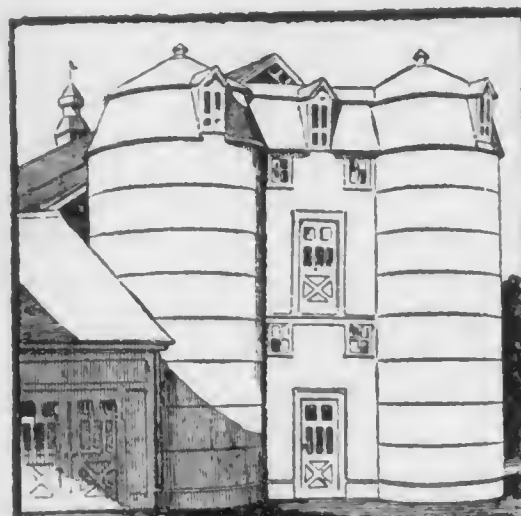
becomes more popular each year because of its low price and better work. Labor costs are lowered too, since the strips are so quickly fixed in place. A trial order of two rolls of Areandee, two holders, and staples—enough for one hundred feet of row, sent express or freight collect for \$9.00. Order direct from this advertisement, or send for free sample of material.

THE RUSSELLOID COMPANY
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FINE FIELD GROWN Cabbage and Tomato Plants. \$1.25 per 1,000. Sweet Potato, \$2.00 per 1,000. Shipped anywhere. FRANKLIN, VA.



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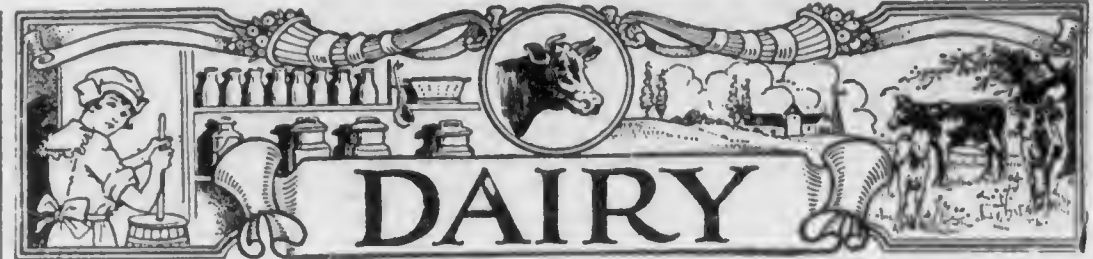
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PLEASE say: "I saw your adv. in Pennsylvania Farmer."



CHORES

The stock-keeper can no more avoid chores than he can death or taxes.

The work of caring for livestock on the average American farm is known as "chores"; and for some reason this term is not popular with the hired men and boys. Much of this unpopularity is due to the crude and hard way which we go about the work. Modern farm buildings and improvements are comparatively new, but even today are woefully lacking in proper equipment. It has been said that humanity is prone to run in ruts, and is always slow to adopt new ideas. From earliest times, ridicule, ostracism and even death have been the portion of him who would pull the wheels of progress out from the rut of "well enough." The introduction of the spinning jenny, the power loom and other textile machinery in England caused nation-wide riots.

Things are now changing rapidly, and decidedly for the better. We have learned that it is not only wise but profitable to adopt labor-saving

am often surprised to find, even on good farms, this method still in use. There is very great need for improvement; and we are fortunate in having a splendid supply of modern equipment now being placed on the market, and at reasonable prices.

A great number of inventions have recently appeared which not only save labor but also add comfort and safety to the stock. The old barn door can be replaced by a splendid roller track system, so that a small child can easily operate it; strong and easily operated carriers are manufactured which lighten the task, and make it possible for one man to do the work of three. These carriers convey the manure out of the barn and drop it into the manure spreader, no heavy lifting being required. Feed carriers, running on a track down the long rows, make the work of feeding real play for the farm boy; stalls for animals are made which are comfortable, easy to operate and built to last a life time;

with such appliances it is a pleasure to put the stock in or out of the barn. Milking machines of several makes and kinds are now success-



Registered Brown Swiss Yearling Bulls. Owned by C. M. Robinson, Crawford Co., Pa.

machinery and treat our animals in a humane and efficient manner.

During the past few years of war and unsettled conditions our farm building program has been postponed, and we are now confronted with the necessity of going ahead. The period of readjustment has been severe on the farmer, and he feels more than ever before the need of improvements which will result in economy and profit.

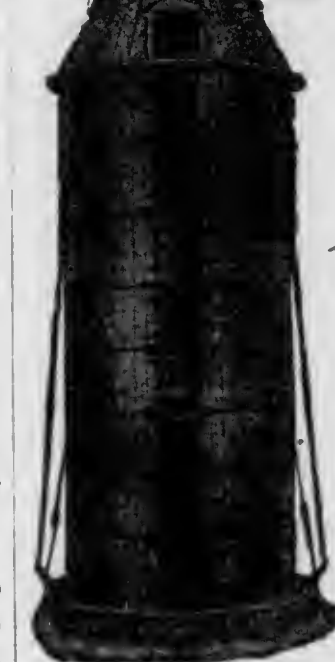
The chores, or caring for the livestock on the average farm, often falls to the boy and the hired man. While this is important work, it is often neglected because of its disagreeable features. If the proprietor was obliged to perform the task himself, he would probably be more inclined to put in improvements which would lighten the labor.

As I was raised on a dairy farm where we kept not only a large milking herd, but also horses, sheep and swine, I have had my experience with chores; and the dark, poorly-ventilated basement barn is still fresh in my memory. Cleaning the stables by the wheelbarrow and slippery plank method were then in vogue. As I go about the country today, I

fully being operated in many of our large dairies, and with modern equipment they are easily installed. Feed grinders, elevators and carriers convey the grains and mill feeds rapidly and easily to their places of use; in fact every detail of the work in caring for animals has been looked after with great skill and ingenuity. Self feeders and hog pens are provided for the swine, and the mortality in this great industry has thereby been greatly lessened.

The good results which come from better equipment too often are overlooked. Much disease among livestock, especially tuberculosis, is spread and developed thru poorly ventilated and unsanitary barns and equipment. The product, especially that of the dairy, brings a higher price when produced in a clean and well-equipped barn. Time and expense of labor can be saved when things are handy; livestock do better, look better and sell better when properly cared for in good quarters, and the term "chores" has a new and far better meaning under this new order of things.—A. L. Haacker, Lancaster Co.

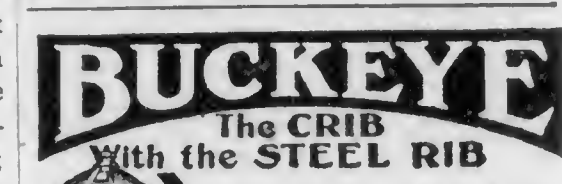
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I will sell at Public Sale Saturday, June 25th, at 1 P. M., my fine country house of 37 acres located at the edge of the beautiful town of Wadsworth, Pa. Fine building, fine land. Terms: \$1,000 cash, \$3,000 date of possession, December 1st, 1921, balance mortgage on easy payment. Send for detailed description and picture of the buildings. PAULINE WISE, Owner, The Allen-Hartwell-Dibble Company, Wadsworth, Ohio.

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FARMS

Poultry, truck, stock and grain farms cheap. FIGGS & NOCK, Salisbury, Maryland.



Livestock Losses in Shipping

By W. H. TOMIHAVE

FEW people realize the loss to the producer, packer and consumer that takes place in shipping livestock to market. This loss is not only caused by animals dying while in transit, but thru bruises and injuries of one kind or another. It is difficult to estimate the amount of this loss in terms of money, but it amounts to millions of dollars each year. Some of this loss is unavoidable, but a great deal is caused by carelessness on the part of some person who has something to do with the handling of the livestock at some stage of the marketing route. It may be in loading, while in transit or after the animals have been unloaded at the central market.

The loss may not seem large when only one individual case is considered—a slight bruise of a few hogs or cattle in one car, or the death of an occasional hog in a shipment does not seem to represent any large sum of money. It is estimated that the total loss last year thru death or bruised condition thru poor handling in marketing hogs, amounted to approximately \$3,508,880. This loss represents approximately \$0.000 hogs, all of which is a distinct loss to the meat industry and must be paid for by some one. It seems that much of this loss might be avoided if it were possible to have closer supervision in the handling of livestock in transit or at the loading and unloading centers. Investigations show that the principal losses are caused thru injuries due to mistreatment, delays in shipment or transit, improper pens and chutes, together with rough handling at the unloading centers. Shippers are also frequently at fault in that they do not provide the proper bedding for the livestock, and excessive loading which causes losses from suffocation.

The Institute of American Meat Packers started an investigation to secure all information possible concerning the cause of losses in shipping livestock and to suggest ways and means of overcoming such losses. A survey made by this organization shows that during 1919 approximately 10,089,984 cattle were slaughtered under Federal inspection in the United States. Of this number of cattle slaughtered, approximately 2,900,000 head reached the slaughter house in a bruised condition which represents about 29 per cent of all the cattle handled in Federal inspected establishments. The extent of the bruises varied but it represents an average loss of 1.27 pounds of beef per carcass or a total of 3,716,140 pounds of meat that could be used for food.

The American Institute of Meat Packers has recently issued a pamphlet that gives a survey of its findings concerning the reason for such heavy losses and offers a number of timely suggestions as to how such losses may be avoided. These are in substance, as follows: Care should be exercised in bedding cars for loading. Never permit cinders, rock dust, coal slack or similar material to be used. For shipping hogs during the summer months, use sand if it can be secured. For winter shipping, use good, clean straw in sufficient quantities to keep the animals comfortable. Cattle cars should be loaded in this way as it means crippled, trampled, suffocated and dead animals. It is false economy to overload the cars. Don't try to save money in this way as it means crippled, trampled, suffocated and dead animals. It is recommended that the safe minimum for loading a 36-ft. car should be: cattle, 22,000 lbs.; single deck, 16,000 lbs.; sheep, single deck, 12,000 lbs.; double deck, 18,000 lbs.; calves, double deck, 22,000 lbs.; single deck, 14,000 lbs. The present minimum on most railroads is about 1000 lbs. in excess of these weights. Losses are frequently caused by nails protruding in the cars. These should be removed and every shipper should examine the door fastenings and see that they are in proper repair. Care should be exercised in loading and unloading livestock, especially if the chutes are steep. Hogs should not be driven hurriedly in hot weather as they can not stand very much heat. If the hogs are hot and panting when they reach the loading station, they should be allowed to rest before loading; otherwise, they are likely to die from suffocation. Overheated hogs should not have cold water thrown over their backs, but should be sprinkled with a fine spray on the belly or the floor of the car should be moistened. All of these suggestions are important and severe losses can be avoided if these rules are observed. The enormous livestock losses which now occur annually can be materially reduced if the shipper will use the proper precaution and see that the livestock is loaded in good condition. The railroad companies should provide competent attendants where the livestock must be unloaded, and also provide better service for the transportation of livestock and the switching thru the division centers.

Greater care in the handling and unloading of the livestock at the marketing centers will also aid in reducing losses. HAMPSHIRE SWINE BREEDERS The Hampshire swine breeders of Pennsylvania have perfected a state organization, elected officers and obtained a charter. Ten acting field men have been appointed. Mr. F. W. Fogelsanger, Chambersburg, is secretary-treasurer. There is a movement on foot to make it possible for every member of the state organization to be a member of his own county organization, and in addition, a member of the National Swine Growers' Association of America.

The members are making arrangements for a meeting which will be held perhaps early in June at Chambersburg, Pa. E. C. Stone, of Peoria, Ill., secretary of the American Hampshire Swine Record Association, president of Association of all Purebred Swine Records and also vice president of the National Swine Growers' Association of America will be the principal speaker.



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In the important work of salvaging the world's crops after they are harvested, Case Steel-built, Galvanized Threshers each year render a great service to Humanity and Civilization. Without the help of modern threshers, such as Case Machines, it would be impossible for the farm workers of today to save the annual crops.

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Case Threshers have been built since 1842 and this line of justly renowned threshing machines now includes a thresher for every seed crop and a size suitable for every threshing need. There is the small 20 x 28 machine for individual threshing, while the light weight 22 x 36 and 26 x 46 threshers are ideal for average "community" service and the 28 x 50, 32 x 54, 36 x 58, and 40 x 62 big-capacity machines meet every requirement for custom threshing on any scale.

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Case Threshers are "all-crop" machines. That is, at a slight additional cost, they can be equipped and adjusted to handle grain, grass seed, peas, beans, rice or peanuts. This may be done in the field in a short time.

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All sizes of Case Threshers can be equipped with feeder or hand feed; windstacker or common stacker, or any one of a variety of improved grain handlers. All of these attachments are of our own design—Case-made for Case Machines.

No matter where you are, nor what crop you grow, there is a Case Thresher of a size and type to meet your requirements. Our catalog may prove of interest to you.

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7 leading varieties, postpaid 20¢. 10¢. 20¢. 30¢. 40¢. 50¢. 60¢. 70¢. 80¢. 90¢. 1.00. 1.10. 1.20. 1.30. 1.40. 1.50. 1.60. 1.70. 1.80. 1.90. 2.00. 2.10. 2.20. 2.30. 2.40. 2.50. 2.60. 2.70. 2.80. 2.90. 3.00. 3.10. 3.20. 3.30. 3.40. 3.50. 3.60. 3.70. 3.80. 3.90. 4.00. 4.10. 4.20. 4.30. 4.40. 4.50. 4.60. 4.70. 4.80. 4.90. 5.00. 5.10. 5.20. 5.30. 5.40. 5.50. 5.60. 5.70. 5.80. 5.90. 6.00. 6.10. 6.20. 6.30. 6.40. 6.50. 6.60. 6.70. 6.80. 6.90. 7.00. 7.10. 7.20. 7.30. 7.40. 7.50. 7.60. 7.70. 7.80. 7.90. 8.00. 8.10. 8.20. 8.30. 8.40. 8.50. 8.60. 8.70. 8.80. 8.90. 9.00. 9.10. 9.20. 9.30. 9.40. 9.50. 9.60. 9.70. 9.80. 9.90. 10.00. 10.10. 10.20. 10.30. 10.40. 10.50. 10.60. 10.70. 10.80. 10.90. 11.00. 11.10. 11.20. 11.30. 11.40. 11.50. 11.60. 11.70. 11.80. 11.90. 12.00. 12.10. 12.20. 12.30. 12.40. 12.50. 12.60. 12.70. 12.80. 12.90. 13.00. 13.10. 13.20. 13.30. 13.40. 13.50. 13.60. 13.70. 13.80. 13.90. 14.00. 14.10. 14.20. 14.30. 14.40. 14.50. 14.60. 14.70. 14.80. 14.90. 15.00. 15.10. 15.20. 15.30. 15.40. 15.50. 15.60. 15.70. 15.80. 15.90. 16.00. 16.10. 16.20. 16.30. 16.40. 16.50. 16.60. 16.70. 16.80. 16.90. 17.00. 17.10. 17.20. 17.30. 17.40. 17.50. 17.60. 17.70. 17.80. 17.90. 18.00. 18.10. 18.20. 18.30. 18.40. 18.50. 18.60. 18.70. 18.80. 18.90. 19.00. 19.10. 19.20. 19.30. 19.40. 19.50. 19.60. 19.70. 19.80. 19.90. 20.00. 20.10. 20.20. 20.30. 20.40. 20.50. 20.60. 20.70. 20.80. 20.90. 21.00. 21.10. 21.20. 21.30. 21.40. 21.50. 21.60. 21.70. 21.80. 21.90. 22.00. 22.10. 22.20. 22.30. 22.40. 22.50. 22.60. 22.70. 22.80. 22.90. 23.00. 23.10. 23.20. 23.30. 23.40. 23.50. 23.60. 23.70. 23.80. 23.90. 24.00. 24.10. 24.20. 24.30. 24.40. 24.50. 24.60. 24.70. 24.80. 24.90. 25.00. 25.10. 25.20. 25.30. 25.40. 25.50. 25.60. 25.70. 25.80. 25.90. 26.00. 26.10. 26.20. 26.30. 26.40. 26.50. 26.60. 26.70. 26.80. 26.90. 27.00. 27.10. 27.20. 27.30. 27.40. 27.50. 27.60. 27.70. 27.80. 27.90. 28.00. 28.10. 28.20. 28.30. 28.40. 28.50. 28.60. 28.70. 28.80. 28.90. 29.00. 29.10. 29.20. 29.30. 29.40. 29.50. 29.60. 29.70. 29.80. 29.90. 30.00. 30.10. 30.20. 30.30. 30.40. 30.50. 30.60. 30.70. 30.80. 30.90. 31.00. 31.10. 31.20. 31.30. 31.40. 31.50. 31.60. 31.70. 31.80. 31.90. 32.00. 32.10. 32.20. 32.30. 32.40. 32.50. 32.60. 32.70. 32.80. 32.90. 33.00. 33.10. 33.20. 33.30. 33.40. 33.50. 33.60. 33.70. 33.80. 33.90. 34.00. 34.10. 34.20. 34.30. 34.40. 34.50. 34.60. 34.70. 34.80. 34.90. 35.00. 35.10. 35.20. 35.30. 35.40. 35.50. 35.60. 35.70. 35.80. 35.90. 36.00. 36.10. 36.20. 36.30. 36.40. 36.50. 36.60. 36.70. 36.80. 36.90. 37.00. 37.10. 37.20. 37.30. 37.40. 37.50. 37.60. 37.70. 37.80. 37.90. 38.00. 38.10. 38.20. 38.30. 38.40. 38.50. 38.60. 38.70. 38.80. 38.90. 39.00. 39.10. 39.20. 39.30. 39.40. 39.50. 39.60. 39.70. 39.80. 39.90. 40.00. 40.10. 40.20. 40.30. 40.40. 40.50. 40.60. 40.70. 40.80. 40.90. 41.00. 41.10. 41.20. 41.30. 41.40. 41.50. 41.60. 41.70. 41.80. 41.90. 42.00. 42.10. 42.20. 42.30. 42.40. 42.50. 42.60. 42.70. 42.80. 42.90. 43.00. 43.10. 43.20. 43.30. 43.40. 43.50. 43.60. 43.70. 43.80. 43.90. 44.00. 44.10. 44.20. 44.30. 44.40. 44.50. 44.60. 44.70. 44.80. 44.90. 45.00. 45.10. 45.20. 45.30. 45.40. 45.50. 45.60. 45.70. 45.80. 45.90. 46.00. 46.10. 46.20. 46.30. 46.40. 46.50. 46.60. 46.70. 46.80. 46.90. 47.00. 47.10. 47.20. 47.30. 47.40. 47.50. 47.60. 47.70. 47.80. 47.90. 48.00. 48.10. 48.20. 48.30. 48.40. 48.50. 48.60. 48.70. 48.80. 48.90. 49.00. 49.10. 49.20. 49.30. 49.40. 49.50. 49.60. 49.70. 49.80. 49.90. 50.00. 50.10. 50.20. 50.30. 50.40. 50.50. 50.60. 50.70. 50.80. 50.90. 51.00. 51.10. 51.20. 51.30. 51.40. 51.50. 51.60. 51.70. 51.80. 51.90. 52.00. 52.10. 52.20. 52.30. 52.40. 52.50. 52.60. 52.70. 52.80. 52.90. 53.00. 53.10. 53.20. 53.30. 53.40. 53.50. 53.60. 53.70. 53.80. 53.90. 54.00. 54.10. 54.20. 54.30. 54.40. 54.50. 54.60. 54.70. 54.80. 54.90. 55.00. 55.10. 55.20. 55.30. 55.40. 55.50. 55.60. 55.70. 55.80. 55.90. 56.00. 56.10. 56.20. 56.30. 56.40. 56.50. 56.60. 56.70. 56.80. 56.90. 57.00. 57.10. 57.20. 57.30. 57.40. 57.50. 57.60. 57.70. 57.80. 57.90. 58.00. 58.10. 58.20. 58.30. 58.40. 58.50. 58.60. 58.70. 58.80. 58.90. 59.

Light and Power Problems

A SHORT time ago a farm electric plant service man told me of a case he worked on. He had received a call some eighteen miles out in the country to fix a plant that was not delivering the goods.

"Some one told this farmer to clean the commutator on his generator. It was sparking a great deal and the generator was not charging the battery as it should," explained the service man to me. "That part was all right and probably the cleaning of the commutator was necessary. But where this farmer fell down was the way he decided to do the job. Knowing that steel wool was one of the best things he could get to rub off dirt from a metal surface he decided to use it for this job. He applied the steel wool to the commutator while the generator was running. The result was sad to behold and the entire outfit looked like Santa Claus with a hundred growth of whiskers."

Steel wool is nothing but iron. The commutator core and the core of the armature are ironed also and are magnetized, as is the field coil core. When the steel wool was applied it simply jumped into every corner in that generator. It was attracted by the magnetized parts of the generator. It was a wonder that the service man was able to do anything with it. The job took over a day and all the particles of steel wool were not removed even then.

Never use steel wool to clean anything about a generator or a motor. If nothing else, it will very likely "short circuit" the segments of the commutator. Very fine sand paper or emery cloth is the best thing to use. Even with that care must be taken not to get the dust particles around the bearings.

"Can you advise me what size wire to use to connect up a 60-watt yard lamp located 800 feet away from my 32-volt plant?" asks E. B. S.

Use number 6 B. & S. gage copper wire.

"I would like to know what the 'load' is for most lights and accessories used on 32-volt outfits? For instance how many watts does an electric iron consume?" writes a northern Pennsylvania farmer.

In the following electric consumption table I have listed the "loads" caused on a plant by the addition of any one of following electric bulbs or accessories. Here is the table:

Lamps—Standard	Sizes—32	Volts
5 watts	3 candle power	
10 watts	7 candle power	
20 watts	15 candle power	
40 watts	32 candle power	
50 watts	55 candle power	
75 watts	85 candle power	
100 watts	125 candle power	
—110 Volts—		
10 watts	6 candle power	
15 watts	10 candle power	
25 watts	18 candle power	
40 watts	30 candle power	
75 watts	69 candle power	
100 watts	100 candle power	

Heating Devices

Electric irons	525 watts
Curling iron heater	90 watts
1 Pt. water heater	300 watts
1 Qt. water heater	500 watts
Toaster	440 watts
Percolator	420 watts
Disc stove 4 in. diam.	450 watts
Disc stove 6 in. diam.	600 watts

—Motors—		
	Output watts.	Input watts.
1/4 H. P.	95	150
1/6 H. P.	125	175
1/4 H. P.	185	350
1/2 H. P.	375	700
3/4 H. P.	550	1050
1 H. P.	746	1250
1 1/2 H. P.	1120	1870
2 H. P.	1492	2500
—Accessories—		
	Watts	
Churns	175-700	
Dishwasher	100	
Incubators	25	
Sewing machines or motors	20	
Vacuum cleaners	120	
Pumps	150-700	
Washing machine	230	
Fans	20-60	

Every now and then I meet a farmer who is "sore" on all farm light and power plants. Claims they won't run anything.

"Why, if we light two or three lights and turn on the electric from the whole works dies out," he states.

Now that is not the plant's fault. The fault lies with the farmer or more often with the dealer. The plant is entirely too small for its job.

If a farmer had a big heavy truck mired in the mud he would not take his light carriage mare to pull it out. No, he would hitch his team of heavy farm horses. The mare might be the best blooded animal in the state and perfect as a carriage horse. Simply the job would be too heavy. The same with the farm light and power plant. It may be the best in the state but that does not mean it can do everything.

In buying farm light and power plants the farmer wants to figure everything he may want operated by electricity. Then the length and size of wires must be taken into consideration. How much of a load will the maximum load be at any one time? This is figured in kilowatts.

It is wise for the buyer of a plant to determine this for himself. The dealer, in his anxiety to make a sale, may let the farmer buy something not big enough in order to keep the price down. It is well for the farmer to figure out everything he will possibly want to do with the plant before he decides what size to buy.

"Can you give me the definition or explanation of the following terms: Watts, watt-hour and kilowatt hour?"

The watt is the unit of electric power. It is the product of the current in amperes flowing in a circuit by the pressure in the volts. It is 1-746th of a horse power.

The watt hour is the unit of electrical energy. The given watt-hour capacity of a battery, for instance, means the ability of a battery to furnish one watt for the given number of hours or given number of watts for a number of hours such that their product will be the given watt hours. The kilowatt is an electrical unit equal to 1000 watts.

A kilowatt hour is 1000 watts used for one hour. A kilowatt hour may be used in any portion of an hour. For instance, if 60,000 watts were used for an hour it would equal 60 kilowatt hours and, therefore, 1-60th of this, or one kilowatt hour, could be used in one minute.

A Chester Co., Pa., farmer wants

to know, "Why can't I buy a generator and have it attached to my old gasoline engine and then have a farm lighting plant?"

Hooking a generator up to your gasoline engine, would seem to me about the same thing as hitching up a mule to a good horse and trying to make a perfectly matched team out of them. The mule and the horse would do all right for emergency use as a make-shift, but you never could expect the team work you would get from a perfectly matched span of Percherons. To give continuous service every part of a lighting unit must be made by the same manufacturers, in the same factory. Each part—the engine, generator and switchboard must be designed to co-operate with each other. Not only designed, but they must be built to work in perfect harmony for a great many years. This is one of the reasons for the big success of farm light and power plants. They are designed and built and sold as one harmonious unit—each part is in perfect step with all others and will stay in tune with each other as long as the complete plant holds together. To buy a generator in one place, use an old engine and a home-made switchboard would seem to me to be about the same thing as accepting a substitute for gold. There isn't any. I may have put this a little too strong, but honestly believe that what I am telling you is for your own good.—Alex G. Cruikshank.

HAYING WITH THE TRACTOR

Using the tractor in the hay field is no novelty; it is one of the places where the tractor makes work go along more smoothly and rapidly and saves both horse and man flesh. At least, that has been our experience. Hay making is one of those farm operations that calls for plenty of heavy work in a short space of time. But by using a tractor to pull the wagons in the fields, a loader to load the hay direct from the swath or windrow, and a hay fork and carrier in the barn we find many hands eliminated and the work made much simpler and easier than it formerly



Loading Hay With a Tractor

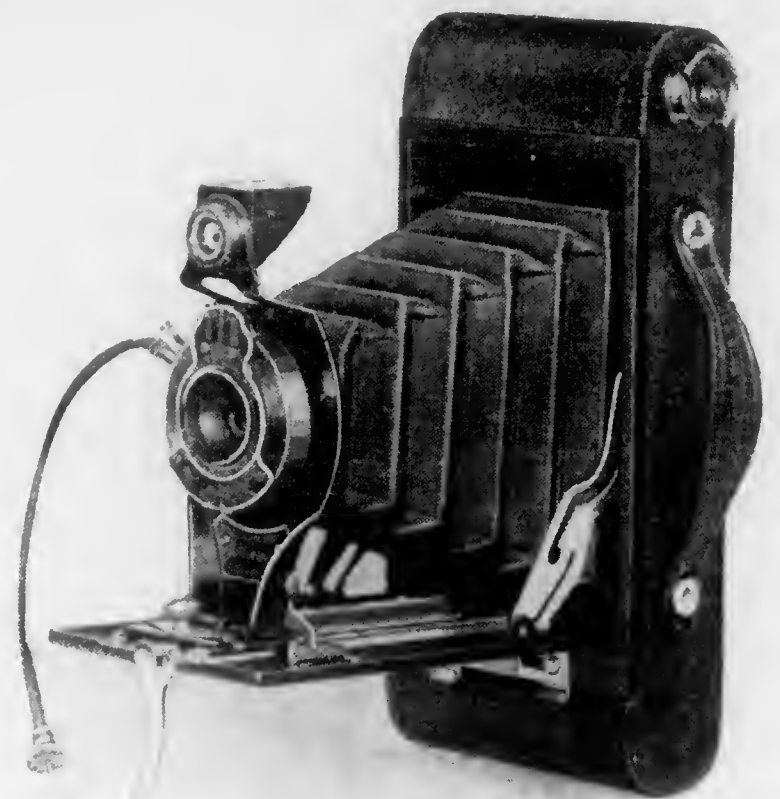
was when hands did nearly everything else except pull the wagons.

One of the best features we found about the use of the tractor in haying was the steady, dependable power. The wagon and loader can be pulled along at a steady pace without any jerking or stopping at intervals which does not throw the men on the wagon off balance, and the tractor can be speeded up a little when you come to a place in the field where the hay is thin on the ground or it may be slowed when coming to heavier spots, which is very convenient for the men loading. In case it looks like rain the tractor can be speeded up more which will take two or three men on the wagons to load, and this may mean getting in one or more loads that would have been possible if horses were being used.

It is Kodak Made.

The No. 2A Folding BROWNIE

\$10.00



Honest workmanship has become a habit in the Kodak factories, and it is in those factories, in the skilled hands of Kodak workmen and under Kodak superintendence, that the Brownie cameras are made.

The 2A Folding Brownie gives a happy combination of real convenience and efficiency with genuine economy. The pictures are 2 1/4 x 4 1/4 inches, a really satisfactory size, yet not so large as to make the film and printing costs high. The folding feature makes it convenient to carry; the excellent finish is both durable and pleasing.

The Kodak Ball Bearing shutter, with which this camera is fitted, is quiet and certain in action. It has snap-shot speeds of 1/25, 1/50 and 1/100 of a second and the usual "time" features.

The Meniscus Achromatic lens is of excellent quality and each one is carefully tested.

Like all Kodaks and Folding Brownies, the No. 2A is autographic—provides the means for dating and titling the negatives at the time the exposure is made. This camera has two tripod sockets, a finder and an accurate focusing scale.

The price, ten dollars, includes the excise war tax and the films are but thirty cents for six exposures. Picture taking with a Brownie camera is very simple and is less expensive than you think.

Catalogue of Kodaks and Brownies free at your dealer's or by mail.

EASTMAN KODAK COMPANY, ROCHESTER, N. Y., The Kodak City

PENNSYLVANIA FOR GRAIN DRILL SERVICE

Here is a compact outfit that sows all kinds of grain and fertilizer with minute accuracy. Quantities regulated by levers convenient to operator. Grass seeder either in front or behind openers, as desired. Low down construction throughout with hopper always in balance.

The Pennsylvania is built in sizes 8 to 12 tubes with choice of Pin Hoe, Spring Hoe or Single Disc openers. Special Drill Catalogue fully explaining efficient seeding mailed on request.

A. B. FARQUHAR CO., Ltd., Box 546, York, Pa.
Also Engines and Rollers, Sawmills, Thrashers, Potato Diggers. Write for description.



Positive Force Feeds
Chain Drive Insures
Accurate Seeding

Two pieces of 2 by 2 inch oak were fastened to either side flush with the top giving a more finished appearance and adding an extra four inches to the width.

Drawers were added and a vise of the revolving type and a good bench top were made a part of the equipment.

We all may not have silo fillers to brag but oftentimes a frame may be picked up at a sale for junk price or less, or it may be made at home.—H. A. C., Montgomery Co., Pa.

WESTERN CANADA Land of Prosperity

offers to home seekers opportunities that cannot be secured elsewhere. The thousands of farmers from the United States who have accepted Canada's generous offer to settle on FREE homesteads or buy farm land in her provinces have been well repaid by bountiful crops. There is still available on easy terms

Fertile Land at \$15 to \$30 an Acre
—land similar to that which through many years has yielded from 20 to 45 bushels of wheat to the acre—oats, barley and flax also in great abundance, while raising horses, cattle, sheep and hogs is equally profitable. Hundreds of farmers in western Canada have raised crops in a single season worth more than the whole cost of their land. With such success comes prosperity, independence, good homes and all the comforts and conveniences which make life worth living.

Farm Gardens, Poultry, Dairying
are sources of income second only to grain growing and stock raising. Attractive climate, good neighbors, churches, schools, good markets, railroad facilities, rural telephone, etc.

For illustrated literature, maps, description of farm opportunities in Manitoba, Saskatchewan, Alberta and British Columbia, reduced railway rates, etc., write

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160 ACRES FARM IN WESTERN CANADA FREE



Two Billion Dollars Per Year!

A LEADING agricultural expert estimates that this enormous sum would be added annually to our agricultural production if our swamp lands were properly drained.

This state has thousands of acres of rich soil lying under water—you probably have some wet spots on your own farm, waiting for the mighty force of



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to drain it and put it in shape to bear crops.

Ditching with dynamite is the accepted method all over this state because it is easy, quick and quite inexpensive. No machinery—just a few sticks of dynamite. It does not require expert knowledge to handle explosives on the farm successfully, but if your project requires it we will send a Du Pont field representative to help you.

First write for our Farmers' Hand Book of Explosives, which has complete instructions, then see our local dealer.

E. I. du Pont de Nemours & Co., Inc.

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A Good Threshing Rig Increases Your Profits

THE value of good plowing and planting is too often lost in wasteful threshing. A clean-threshing outfit that delivers 100% of your small grain may mean the difference between profit and loss this year. It will safeguard the time, labor and money you put into your land.

Take time to select a rig that will not only serve you well this year, but will last you for many years to come.

Look into the record of the E-B Geiser Thresher for the past 60 years. Then study its construction, simplicity, ease of operation, and grain-separating and grain-cleaning ability. Ask the E-B dealer in your neighborhood why grain from E-B Geiser Threshers brings more money, or write us for the facts.

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Established 1852 Rockford, Ill.

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Machinery Manufactured and Guaranteed
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This department is reserved for use of our readers to discuss problems and matters of local, state or national interest. Write your views and comments briefly on any question of social, economic or educational importance and thus share them with others. Such articles should not exceed 200 or 300 words. Publication of such articles does not signify editorial endorsement or agreement.

THE TAXATION MUDDLE

In your editorial "Who Will Pay the Piper?" you state the following: "One of the biggest questions confronting Congress is that of tax revision. For months there has been persistent agitation, especially by the big interests, for relief from burdensome taxes."

You have summed up the situation pretty well, but you are mistaken in thinking that the big, or any other, interests want to be relieved of burdensome taxation. All that anybody seems to want, if uttered words and written expression mean anything, is merely the shifting of the burden from one set of shoulders onto some one else's shoulders, for, if this were not so and they really wanted a remedy for burdensome taxation, they would endorse the Single Tax Party's program to take the entire rent of land for public use and benefit, thus doing away with the necessity of taxing big or little business, industry or enterprise, incomes or inheritances, or countenancing any other form of robber taxation.

Rather than bring this up for discussion, Prof. Houston of Penn. and Adams of Yale, Farm Federations, Congress committees, newspaper and magazine editors and writers, prefer to still further muddy the waters of the already muddled taxation "Slough of Despond"—leaving the intelligent (?) American voter in a worse state than before—if that is possible.

If the Federal Government wants four billions of revenue and the state, county and local governments also have use for great revenues, why do not these various forms of government collect for their needs that which belongs to them as representatives of all the people—before asking useful producers and consumers to contribute?

The rent of land, if publicly collected, would more than meet the entire expenses of government of all kinds. It is the only fund to which government can justly and morally claim ownership, but government prefers to take the private property of the consumer, the income possessor, or the recipient of an inheritance. Any big or little interest caught doing the same thing would probably land in jail!—Oliver McKnight, Queen Anne Co., Md.

GARLICKY WHEAT PRICES

Last October I drew attention to the serious handicap the Maryland farmers were working under, in marketing their garlicky wheat. At that time No. 2 garlicky was selling for 22c discount under the No. 2 Red Western (free of garlic) grade. Later the discount narrowed to 5c, but in April, it again widened to 22c difference.

That such a ruinous discount of 22c should have ruled twice in six months time show, that the situation for this wheat is serious and should call forth real activity from our State Board of Agriculture along lines, that would broaden its outlet and thereby the producers secure prices nearer its real worth. The low ruling prices alone for this "high

cost produced wheat of itself is drastic enough, but when a further discount of 22c for the garlicky wheat is demanded, the situation calls strenuously for a correction.

Particularly so, when Prof. Symons of the State Rotation Service is quoted as stating, that seven-eighths of the Maryland wheat is classed as garlicky grade, and the Maryland State Marketing Committee estimates the loss at \$1,500,000, which looks reasonable when considered at the big discounts that have ruled for seven months past.

In April, when the difference was around 12 to 15c discount, quite a number of cars of this wheat, I am told, was shipped out of our Baltimore elevators to Philadelphia and vicinity, on a freight rate of 17c per hundred, while Philadelphia's market, I believe was holding nominally around 9c discount.

With probably 45 per cent of the Maryland crop still unsold, and the growing crop showing promise, the matter calls for quick relief.

I get it that the millers who use this No. 2 garlicky wheat in fair quantity calculate it is worth to them 5c discount at harvest time, and the fall months, and about 3c difference at this time of year. (The U. S. Grain Corporation held it at not over 2c discount while they had control). If the millers' views are correct, why should it now be selling at so much greater discount? Are not the wholesale winter wheat flour prices based on the garlicky wheat?—C. Bosley Littig, Maryland.

A WARNING

Dean Davenport, of Illinois, warns against wrong use of the Farm Bureau. It will be well to bear his remarks in mind, as quoted in the following:

"Temptation to misuse an organization such as the Farm Bureau, especially at a time like the present, is almost irresistible. Suffering under limitations and hardships of one kind or another, in which the individual finds himself powerless, why should not the farmer use his organization as others are using theirs for securing relief by the most direct and effective means? Simply because, if we use our best machinery for assault and battery, we shall find it spoiled for the later and more permanent, as well as more important, work of constructive development. As the farmer well knows, many a good monkey wrench has been spoiled by using it for a hammer."

"It may as well be written down as axiomatic that if this great organization is to do the work that needs to be done in and for agriculture it must never lose its temper and it must never lose the respect of its associated industries and interests. Not opposition and fighting, but conference and constructive planning must characterize the methods of this association which is altogether unique among masses of men. For our object is development of a great national industry and mode of life, not simply protecting the rights of a certain group of citizens, which are already guaranteed."—Market Growers Journal.

PASSING EVENTS IN PICTURES



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- 1—Famous South Portico of Executive Mansion, Washington reflected in a mirror of water.
- 2—Girls at the Castle School, Tarrytown, N. Y., doing some hurdle-racing.
- 3—Froek of navy serge rimmed with braid and black and white silk.
- 4—Left to right: Arnold Daly, actor; Irving Berlin, song writer; Claude Graham-White, English aviator, and his wife (formerly Mrs. Geo. Cohan); G.orgette Cohan Souther (daughter of Geo. M. Cohan); J. William Souther.
- 5—G. W. Loft's "On Watch," winning the \$6000 Faumonek Handicap, Jamaica, L. I.
- 6—Sailors washing their hammocks aboard the U. S. S. "Arizona."
- 7—Making miniature blocks of Uncle Sam's gold for sampling and careful distribution.

Chicago, constructed this craft of packing boxes, etc., intending to sail for Port Said, via Buffalo, but the trip was delayed due to the foundering of the "Mermaid."

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Of Interest to Farm Women and Girls

A Wide-Awake New Jersey Girl

GERTRUDE MOSCOVITZ has not only distinguished herself in her own county but in the state by the kind of club work which she has been doing for the past four years. We'll let her tell the story herself. What she has done other girls may do also.

"I joined a baking club in 1917 under the leadership of Miss Fannie Cooper, assistant state club leader. In the fall I took a loaf of bread to our county exhibit at Bridgeton, and won first prize, \$1.50.

"During the spring of 1918 Mr. Matlack, our county club leader, came to our school and explained the different projects to us, and I joined the garden club. My garden was a large general vegetable garden, and I kept accurate account of all I did. As a reward for my club work that year I received a certificate of achievement and a trip to the Agricultural College at New Brunswick. The trip was awarded to me for being first in the garden project work of the county.

"In 1919, when Mr. Archibald was county club leader, I joined the canning club and learned how to do cold-pack canning in demonstrations at our school. That summer I canned 219 jars, consisting of 51 varieties of fruits and vegetables. I sent a display of the canning I had done to the farmer's picnic that fall at Tumbling Dam Park, and received \$7.50 in money prizes.

"My canning display was then sent to the Trenton Fair, and there it received first prize in competition with others from various parts of the state. For the work I had done in this project I received another trip to Agricultural College.

"Last year, 1920, when Mr. Howard was county club leader, I again undertook the canning project, and canned 230 quarts of fruits and vegetables, with 85 varieties. Also I made 40 jars of 20 different kinds of jellies and jams. I sent a display to the farmers' picnic and received \$13 in prizes. I also sent a display to the Trenton Fair and won a number of individual prizes.

"Club work has made me want to take a course in home economics, so I am now taking school work in preparation for entering the home economics course at our state college.

The prize money I received is going to help pay my expenses.

"Boys and girls ought to be club members, not because of money prizes, but more on account of the interest and joy of the work."

Gertrude has also interested her whole family in club work. There are four children in the family, and every one is now a club member. Her brothers are in the garden project, and her two sisters are in the baking and cooking projects. Gertrude's club work has not only interested and helped her own family, but has been an inspiration to the community in which she lives. She has demonstrated in a very real way that it pays to be a good club member, and to finish well the tasks which you begin. She was requested to send two of her cans for the national exhibit at Washington, D. C. We are pretty proud of Cora in Cumberland County—Mrs. C. J. S., Cumberland County, N. J.

MILK ESSENTIAL TO CHILD HEALTH

Let us take up in detail the problem of food for children. The most important food for every child, whether in good health or malnourished, is milk. Children should have plenty of whole milk every day throughout the years of growth.

Milk contains the best quality of protein or tissue building and body repair material of any food we use. The protein in milk meets all the protein needs of the growing body, and is easily digested and very completely absorbed. It has the least tendency of any of the animal proteins to promote the growth in the digestive tract of the decay or putrefactive type of bacteria which cause digestive disturbances.

Milk is the richest food in lime, without which good bones and teeth cannot be built. Milk contains phosphorus, which is combined with lime in making bones and teeth. Milk has some, though not so much, iron as some other foods.

Milk contains all three of the body protective substances, called vitamins, which are so essential to the body's well-being, and, in the case of children are absolutely necessary for normal growth. Milk is one of

the best sources of supply for the fat-soluble A vitamin (found in the cream) and water-soluble B vitamin. It contains water-soluble C vitamin in moderate amount only. The A vitamin promotes growth, and prevents a certain form of eye weakness. The B vitamin promotes nerve health and appetite. Leafy vegetables and yeast are good sources of it. The C vitamin occurring in fresh, uncooked fruits and green vegetables, prevents scurvy. Milk also contains cream and sugar—two good fuel foods. Butter made from the cream of milk contains considerable of the A vitamin, and is the most desirable form of fat for children.

The child should have at the very least a pint of milk a day, and a quart a day is the best amount. Undernourished children should have not less than a quart of milk a day. Give them a glass in mid-morning and one in mid-afternoon, as well as at meals. If the child is in school, arrangements can be made for him to have the milk at school.

Many parents say that their children will not take milk. But if you get them interested in their health progress by means of their weight records from week to week, there is little difficulty in getting them to take milk. Give part of the necessary amount to them in milk soup, junket, custards and milk desserts, etc.

Eggs should also be a part of the child's diet. An egg a day, if possible, or at least every other day. The protein in eggs, like that in milk, is efficient for building and repairing tissues. Eggs have but little lime, except in the shell, but they are rich in iron, and have considerable phosphorus and other minerals so valuable in nutrition.

Eggs may be soft cooked, poached, coddled, steamed, baked, or made into omelet, but do not fry them for feeding to children.

Vegetables Are Important. Vegetables are especially important for feeding to children, because of the mineral matter, vitamins and fiber which they supply.

Spinach is particularly rich in iron, so necessary in making healthy red blood.

Leafy vegetables, such as spinach, chard, kale, Brussels sprouts, dandelions, beet tops, lettuce, cabbage and the leaves of any plants used for food contain a great deal of fat-soluble A vitamin, found so largely in butter and cream. This ranks leafy vegetables with milk and eggs so far as the vitamin protective substances are concerned.

In general, vegetables also furnish water-soluble B and C vitamins, so necessary for maintaining nerve vitality, tomatoes being especially rich in water-soluble C vitamin. This C vitamin, which prevents scurvy, is more sensitive to heat than the other two vitamins, but does not seem to be destroyed by heat in the cooked or canned tomato, as in other cooked or canned fruits and vegetables. The tomato acid is believed to be the agent which preserves the vitality of the vitamin in the presence of heat.

Because the C vitamin is so sensitive to heat is one reason for providing some fresh uncooked vegetables and fruit in the children's diet during all seasons of the year.—Pearl MacDonald.

A kitchen cabinet is all right, but if I must choose between the two, give me a high stool where its handy, says one housewife.

PENNSYLVANIA FARMER PATTERNS

Give figures and letters of each pattern exactly as printed at beginning of each description or we will not be responsible for correct fitting of orders. Give bust measure when ordering waist patterns, waist measure for skirt, and age for children's patterns. Address Pennsylvania Farmer, 261 S. Third Street, Philadelphia, Pa.

LADIES' AND MISSES' SUMMER DRESSES

3592.—Daughter Will Like This Model.—The pattern is cut in 3 sizes, 16, 18 and 20 years. An 18-year size will require 5 yards of 40-inch material. The skirt shows new style lines, and the blouse is a very pleasing model. The width of the skirt at the foot is 2 yards. Satin, linen, pongee, gingham, taffeta, etamine, foulard and satin are attractive for this style. Pattern, 10 cents.

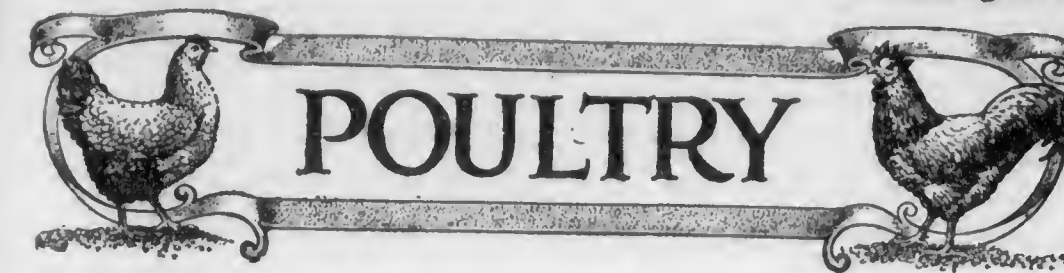


3599-3606.—Smart Sports Costume.—The blouse is cut in 7 sizes: 34, 36, 38, 40, 42, 44 and 46 inches bust measure. It requires 3 yards of 36-inch material for a 38-inch size. The skirt is cut in 6 sizes: 24, 26, 28, 30, 32 and 34 inches waist measure. A 28-inch size will require 3 yards of 44-inch material if cut crosswise, and 2 1/2 yards if cut lengthwise of the goods. Wash satin, serge, linen, gingham, cretonne or chintz could be used for this style. Combinations of material are attractive for it. The waist may be finished with long or short sleeves. The width of the skirt at the foot is about three yards. This illustration calls for two separate patterns at 10 cents each.



3616.—A Pretty Summer Dress.—The pattern is cut in 7 sizes: 34, 36, 38, 40, 42, 44 and 46 inches bust measure. A 38-inch size will require 5 1/2 yards of 44-inch material. The width of the skirt at the foot is 2 1/2 yards. Embroidered crepe or duvetyn, printed georgette or crepe, taffeta, linen, voile, pongee, gingham, organdie, etamine and crepe de chine are attractive for this style. Pattern, 10 cents.

3618.—A Stylish One-piece Dress.—The pattern is cut in 3 sizes: 16, 18 and 20 years. An 18-year size will require 3 1/2 yards of 54-inch material. Gabardine, crepe, mohair, duvetyn, pongee, linen, satin, foulard and taffeta will be attractive for this model. The dress may be finished with a fitted sleeve or one short and flowing. The width of the skirt at the foot, with plaits extended, is 2 yards. Pattern, 10 cents.



POULTRY

MODERN POULTRY HOUSES

Old farm poultry houses can frequently be modernized by simple changes in the arrangement of the windows and the construction of the floor. If the windows are all of glass take out half of them and cover the openings with quarter-inch mesh wire. The will keep out sparrows and if nailed tightly on the inside it will be as much protection from thieves as glass windows.

The open front house furnishes ventilation and keeps the floor more dry. Closed houses are damp and the damp poultry house is a cause of colds and roup. Keep the glass windows clean so that the sunlight will enter and keep the litter in as sanitary condition as possible.

Old earth floors are often unclean. The dirt is soon scratched into the litter and the air in the poultry house soon becomes bad when the hens are working for their scratch feed. Often it will pay to remove the old dirt and construct a solid foundation of sand, stone or cinders. Then a cement floor can be laid at a height from the outside ground so that moisture will be excluded. This cement floor will enable the poultrymen to clean the house quickly. It will keep out rats and weasels.

Sometimes a wooden floor can be built in the old poultry house to insure more dry conditions for the birds. But lumber is high and the stone floor is more practical. If a floor of lumber is used, the outside foundation of the house should be of cement to keep out rats. A farm poultry house with a good floor and plenty of windows is apt to be a satisfactory house if it is properly managed.—R. G. K.

MEND POULTRY HOUSE ROOFS

Nothing places the litter in a poultry house in unsanitary condition quicker than a leaky roof. Litter that is dry will absorb quite a lot of dirt but wet litter means a damp ill-smelling house and this may bring colds and other diseases to the hens.

It pays to keep a bale of shingles on hand and slip in new ones when small holes appear in the roof. Roofing paper may be torn in storms. We find that patches should be made at once or an entire strip may be torn loose by being whipped in the wind. The seams where the strips join should be sealed with tar or one of the commercial preparations sometimes furnished with the rolls of paper.

Roofing paper will sometimes break loose at the seams because the nails have worked out. About every other year it pays to paint over the seams where the nails are placed and this seems to seal them and keep the nails from working out. This is also practical all over houses that are covered with roofing paper on all sides.

Roofing paper is most easily placed on a warm still day. Then the paper flats out nicely against the roof and it can be quickly nailed down. On a windy day it is difficult to do a neat job and much time is wasted trying to keep the paper in place. We find it pays to use good

quality roofing paper on poultry houses. At present the cost of labor is large and it is a satisfaction to have a roof that is good for ten years of service or more.

We find that galvanized nails are the most satisfactory for nailing roofing paper as they do not rust out quickly.—R. G. K.

POULTRY NOTES

The fact that eggs have been so cheap this spring should be an added incentive to cull flocks carefully and keep the birds which have prospects as fall and winter layers. The poultryman who can only sell fresh eggs in the spring when the storage companies are stocking up at a low price, will not make much money. But when the storage companies are unloading next fall and winter and there are few eggs being sold from general farms, it pays to have fresh eggs to sell and they usually bring quite a satisfactory price regardless of how cheap they may have been during the preceding spring.

If poultrymen are either optimists or pessimists according to the advice they receive they will always be unsettled. Every man has to know his own business and steer his own course. He cannot be blown about by every rumor he hears. It pays best to keep a business on a safe basis at all times and not overproduce when prices seem very good or cease production at the first word of a slump. The business men who have an aim and do the best they can and do much of their own work seem to get along best.

Poultry profits are not so large that equipment can be mistreated. Its cost must be divided among many crops of chicks. Clean and drain the incubators and store them in a dry place. Scrape the rust from stove brooders and wipe all parts with an oiled rag. Take the brooders from the houses as soon as they are not needed and they will be easier to clean. Brood coops will last longer if piled in a dry shed when the chicks are weaned and roosting in larger houses. Gather up the sanitary fountains for next year. Poultry hardware costs money and the dishes are soon lost if allowed to be kicked around the farm all summer.

Buyers of hatching eggs should test them for fertility and then report promptly to the producer if those eggs show a poor per cent of fertility. If the buyer kicks on the fertility of the eggs when the chicks ought to be several weeks old there is always the suspicion that the buyer had bad luck with the chicks and is trying to get more free. However most buyers are honest and such experiences do not often occur.

If a buyer has had luck with a setting of eggs bought of an honest breeder, that buyer should not be too severe in his letter to the breeder. Sometimes a poor hatch may result from jostling during transportation or from other causes beyond the control of the producer. A seller of eggs must be a gentleman in dealing with a buyer even if the buyer is unreasonable and unjust in his accusations.—R. G. K.



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It was made for women from 14 to 74. It was made by a woman, and put together by a man. It's color is blue, because it stands for happiness. It's name is the Happy Happening, because it makes happiness happen. Makes it happen to homes, either inside or out. Among 98 other things, it has to do with Mother's kitchen and Father's automobile.

It costs you nothing, but its bound to save you much. It's one of those things it is best not to borrow, because you will never want to return it.

If you will send us 10 cents with your name and address, and just say: "Send the Happy Happening"; along will come one of your own by return mail.

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PENNSYLVANIA FARMER, 261 S. Third Street, Philadelphia, Pa.



Plenty of Dairy Foods Promote the Good Health of Boys and Girls

The Valley of the Giants

By PETER B. KYNE

Chapter VI

Synopsis—John Cardigan, a middle-aged man—a giant in frame and mind—was a pioneer settler along the Pacific coast in Humboldt County, California, in 1850. His business was cutting the giant trees into lumber. His young wife died and was buried among the redwoods in "The Valley of the Giants," as he called the spot which he loved and reserved as a shrine to her memory. Bryce, Cardigan's only son, was an intimate friend of his father—who planned that he should inherit the great lumber business which he had built up. Bryce had a brief love affair with Shirley Sumner, a sister to the neighborhood, but she was soon forgotten and he refused to be lured into raising his offer for it. He determined to move his mill to the San Hedrin watershed and start logging operations there. Bryce, after four years of college in the East, and two years of travel abroad returned to Sequoia. He was met at the train by George Sea Otter. Bryce decided to invest in a young woman who got off the train with him and found no one to meet her.

THE Highest Living Authority, following the gaze of the baggage-smasher, turned and beheld George Sea Otter. Beyond a doubt he was of the West westward. She had heard that California stage-drivers were picturesque fellows, and in all probability the displacing of the old Concord coach of the movie-theater in favor of the motor-stage had not disturbed the idiosyncrasies of the drivers in their choice of raiment. She noted the rifle-stock projecting from the seaboard, and a vision of a stage hold-up flashed across her mind. Ah, yes, of course—the express messenger's weapon, no doubt! And further to clinch her instant assumption that here was the Sequoia motor-stage, there was the pennant adorning the wind-shield!

Dismissing the baggage-smasher with a gracious smile, the Highest Living Authority approached George Sea Otter, noting, the while, further evidence that this car was a public conveyance, for the young man who had been her fellow-passenger was heading toward the automobile also. She heard him say:

"Hello, George, you radiant red rascal! I'm mighty glad to see you. Shake!"

They shook. George Sea Otter's dark eyes and white teeth flashing pleasantly. Bryce tossed his bag into the tonneau; the half-breed opened the front door; and the young master had his foot on the running-board and was about to enter the car when a soft voice spoke at his elbow:

"Driver, this is the stage for Sequoia, is it not?"

George Sea Otter could scarcely credit his auditory nerves. "This car?" he demanded bluntly. "This—the Sequoia stage? Take a look, lady. This here's a Napier imported English automobile. It's a private car and belongs to my boss here."

"I'm so sorry I slandered your car," she replied demurely. "I observed the pennant on the wind-shield, and I thought—"

Bryce Cardigan turned and lifted his hat.

"Quite naturally, you thought it was the Sequoia stage," he said to her. He turned a smoldering glance upon George Sea Otter. "George," he declared ominously, but with a sly wink that drew the sting from his words, "if you're anxious to hold down your job the next time a lady speaks to you and asks you a simple question, you answer yes or no and refrain from sarcastic remarks. Don't let your enthusiasm for this car run away with you." He faced the girl again. "Was it your intention to go out to Sequoia on the next trip of the stage?"

She nodded.

"That means you will have to

wait here three days until the stage returns from Sequoia," Bryce replied.

"I realized, of course, that we would arrive here too late to connect with the stage if it maintained the customary schedule for its departure," she explained, "but it did not occur to me that the stage-driver wouldn't wait until our train arrived. I had an idea his schedule was rather elastic."

"Stage-drivers have no imagination, to speak of," Bryce assured her. To himself he remarked: "She's used to having people wait on her."

A shade of annoyance passed over the classic features of the Highest Living Authority. "Oh, dear," she complained, "how fearfully awkward! Now I shall have to take the next train to San Francisco and book passage on the steamer to Sequoia—and Marcelle is such a poor sailor. Oh, dear!"

Bryce had an inspiration and hastened to reveal it.

"We are about to start for Sequoia now, altho the lateness of our

start will compel us to put up to-night at the rest-house on the south fork of Trinity River and continue the journey in the morning. However, this rest-house is eminently respectable and the food and accommodations are extraordinarily good for mountains; so, if an invitation to occupy the tonneau of my car will not be construed as an impertinence, coming as it does from a total stranger, you are at liberty to regard this car as to all intents and purposes the public conveyance which so scandalously declined to wait for you this morning."

She looked at him searchingly for a brief instant; then with a peculiarly winning smile and a graceful inclination of her head she thanked him and accepted his hospitality—thus:

My Punishment

I don't believe you'd ever guess
My mother's punishment for me,
When I have done a hateful thing,
And been as bad as I can be.

She doesn't lock me in my room,
Or take away my favorite toy,
And leave me till I've promised her
That I will be a better boy.

She doesn't punish with a whip,
Altho some other mothers do;
Some kinds of boys are helped by
that,

But I get madder thru and thru.

No sir! My mother simply says,
"My son, go out and take a walk
Into the quiet of the woods,
Where you and God can have a talk."

Tell Him both sides, both yours
and mine,
He is a judge, you need not
fear.

Talk freely, for I know that He
Will make the right and wrong
quite clear."

So off I start. In winter days
I bundle up—but out I go,
And pretty mad, I'll tell you that,
At least at first it's aways so.

But somehow, when I've gotten
there
The woods are all so still and dim,

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start will compel us to put up to-night at the rest-house on the south fork of Trinity River and continue the journey in the morning. However, this rest-house is eminently respectable and the food and accommodations are extraordinarily good for mountains; so, if an invitation to occupy the tonneau of my car will not be construed as an impertinence, coming as it does from a total stranger, you are at liberty to regard this car as to all intents and purposes the public conveyance which so scandalously declined to wait for you this morning."

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"Why, certainly not! You are very kind, and I shall be eternally grateful."

"Thank you for that vote of confidence. It makes me feel that I have your permission to introduce myself. My name is Bryce Cardigan, and I live in Sequoia when I'm at home."

"Of Cardigan's Redwoods?" she questioned. He nodded. "I've heard of you, I think," she continued. "I am Shirley Sumner."

"You do not live in Sequoia."

"No, but I'm going to hereafter. I was there about ten years ago."

He grinned and thrust out a great hand which she surveyed gravely for a minute before inserting hers in it.

"I wonder," he said, "if it is to be my duty to give you a ride every time you come to Sequoia? The last time you were there you wheeled me into giving you a ride on my pony, an animal known as Midget. Do you, by any chance, recall that incident?"

She looked up at him wondering. "Why—why, you're the boy with the beautiful auburn hair," she declared. He lifted his hat and revealed his thick thatch in all its glory. "I'm not so sensitive about it now," he explained. "When we first met, reference to my hair was apt to rile me." He shook his little hand with cordial good-nature. "What a pity it wasn't possible for us to re-

company. I'll drive; and you can sit up in front with me, Miss Sumner, snug behind the wind-shield where you'll not be blown about."

"I'm sure this is going to be a far pleasanter journey than the stage could possibly have afforded," she said graciously as Bryce slipped in beside her and took the wheel.

"You are very kind to share the pleasure with me, Miss Sumner," he went thru his gears, and the car glided away on its journey. "By the way," he said suddenly as he turned west toward the distant blue mountains of Trinity County, "how did you happen to connect me with Cardigan's redwoods?"

"I've heard my uncle, Colonel Seth Pennington, speak of them."

"Colonel Seth Pennington means nothing in my young life. I never heard of him before; so I dare say he's a newcomer in our country. I've been away six years," he added in explanation.

"We're from Michigan. Uncle was formerly in the lumber business there, but he's logged out now."

"I see. So he came West, I suppose, and bought a lot of redwood timber cheap from some old croaker who never could see any future to the redwood lumber industry. Personally, I don't think he could have made a better investment. I hope I shall have the pleasure of making his acquaintance when I deliver you to him. Perhaps you may be a neighbor of mine. Hope so."

At this juncture George Sea Otter, who had been an interested listener to the conversation, essayed a grunt from the rear seat. Instantly, to Shirley Sumner's vast surprise, her host grunted also; whereupon George Sea Otter broke into a series of grunts and guttural exclamations which evidently appeared quite intelligible to her host, for he slowed down to five miles an hour and coked one ear to the rear; apparently he was profoundly interested in whatever information his henchman had to impart. When George Sea Otter finished his harangue, Bryce nodded and once more gave his attention to tossing the miles behind him.

"What language was that?" Shirley Sumner inquired, consumed with curiosity.

"Digger Indian," he replied. "George's mother was my nurse, and he and I grew up together. So I can't very well help speaking the language of the tribe."

They chattered volubly on many subjects for the first twenty miles; then the road narrowed and commenced to climb steadily, and thereafter Bryce gave all of his attention to the car, for a deviation of a foot from the wheel-rut on the outside of the road would have sent them hurtling over the grade into the deep timbered canons below. Their course led thru a rugged wilderness, wide-ly diversified and transcendently beautiful, and the girl was rather glad of the opportunity to enjoy it in silence. Also by reason of the fact that Bryce's gaze never wavered from the road immediately in front of the car, she had a chance to appraise him critically while pretending to look past him to the tumbling, snow-covered ranges to their right.

She saw a big, supple, powerful man of twenty-five or six, with the bearing and general demeanor of one many years his elder. His rich, dark auburn hair was wavy, and a curling lock of it had escaped from the band of his cap at the temple; his eyes were brown to match his hair and were the striking feature of a strong, rugged countenance, for they were

new acquaintance on the train, Miss Sumner."

"Better late than never, Mr. Cardigan, considering the predicament in which you found me. What became of Midget?"

"Midget, I regret to state, made a little pig of herself one day and died of acute indigestion. She ate half a sack of carrots, and knowing full well that she was eating forbidden fruit, she bolted them, and for her failure to Fletcherize—and speaking of Fletcherizing, did you dine aboard the train?"

She nodded. "So did I, Miss Sumner; hence I take it that you are quite ready to start."

"Quite, Mr. Cardigan."

"Then we'll drift, George, suppose you pile Miss Sumner's handbaggage in the tonneau and then pile in there yourself and keep Marcelle

company. I'll drive; and you can sit up in front with me, Miss Sumner, snug behind the wind-shield where you'll not be blown about."

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company. I'll drive; and you can sit up in front with me, Miss Sumner, snug behind the wind-shield where you'll not be blown about."

"I'm sure this is going to be a far pleasanter journey than the stage could possibly have afforded," she said graciously as Bryce slipped in beside her and took the wheel.

"You are very kind to share the pleasure with me, Miss Sumner," he went thru his gears, and the car glided away on its journey. "By the way," he said suddenly as he turned west toward the distant blue mountains of Trinity County, "how did you happen to connect me with Cardigan's redwoods?"

"I've heard my uncle, Colonel Seth Pennington, speak of them."

"Colonel Seth Pennington means nothing in my young life. I never heard of him before; so I dare say he's a newcomer in our country. I've been away six years," he added in explanation.

"We're from Michigan. Uncle was formerly in the lumber business there, but he's logged out now."

"I see. So he came West, I suppose, and bought a lot of redwood timber cheap from some old croaker who never could see any future to the redwood lumber industry. Personally, I don't think he could have made a better investment. I hope I shall have the pleasure of making his acquaintance when I deliver you to him. Perhaps you may be a neighbor of mine. Hope so."

At this juncture George Sea Otter, who had been an interested listener to the conversation, essayed a grunt from the rear seat. Instantly, to Shirley Sumner's vast surprise, her host grunted also; whereupon George Sea Otter broke into a series of grunts and guttural exclamations which evidently appeared quite intelligible to her host, for he slowed down to five miles an hour and coked one ear to the rear; apparently he was profoundly interested in whatever information his henchman had to impart. When George Sea Otter finished his harangue, Bryce nodded and once more gave his attention to tossing the miles behind him.

"What language was that?" Shirley Sumner inquired, consumed with curiosity.

"Digger Indian," he replied. "George's mother was my nurse, and he and I grew up together. So I can't very well help speaking the language of the tribe."

They chattered volubly on many subjects for the first twenty miles; then the road narrowed and commenced to climb steadily, and thereafter Bryce gave all of his attention to the car, for a deviation of a foot from the wheel-rut on the outside of the road would have sent them hurtling over the grade into the deep timbered canons below. Their course led thru a rugged wilderness, wide-ly diversified and transcendently beautiful, and the girl was rather glad of the opportunity to enjoy it in silence. Also by reason of the fact that Bryce's gaze never wavered from the road immediately in front of the car, she had a chance to appraise him critically while pretending to look past him to the tumbling, snow-covered ranges to their right.

She saw a big, supple, powerful man of twenty-five or six, with the bearing and general demeanor of one many years his elder. His rich, dark auburn hair was wavy, and a curling lock of it had escaped from the band of his cap at the temple; his eyes were brown to match his hair and were the striking feature of a strong, rugged countenance, for they were

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Please Mention Pennsylvania Farmer When Writing to Advertisers

A Story for Children

Louise's Dream

"O H-OH-OUCH," screamed little Louise, as one after another, Nurse untangled the knots in her hair.

"Don't wiggle so and it won't hurt nearly so badly. Now go and wash your face and hands. Quickly now, for it is after eight o'clock. I will turn back your bed covers and wait for you."

When Nurse's back was turned Louise dabbed her hands in the water then wiped them on the towel. A few minutes later, she jumped into bed and her mother came to kiss her goodnight. As she was leaving she noticed her daughter's dirty hands and face.

"Why, Louise, dear," she said, "look at your hands."

"Oh, Mother, I don't see why we have to be so clean, and have so much hair. I wish I were a bird or something. Then I wouldn't have to bother."

Once again Louise was having her hair combed, when a little fairy stepped before her.

"Do you really want to be an animal, it asked.

"May I?" asked Louise eagerly.

"Of course. What would you like to be?" When you decide you may have three wishes."

"Wait a minute," called Louise, "the fairy started away. But it was gone."

As she was walking along the road she saw a bird happily hopping about.

"Oh, I wish I were a bird," she said aloud.

No sooner had she said it than she became a robin. The funny part of it was, she still could think like a girl, and she was so surprised, that she almost pounced upon her. She

was merely a clever pose and sustained with difficulty. She was con-firmed in this assumption when, after sitting with him a little on the porch after dinner, she complained of being weary and bade him good-night. She had scarcely left him when he called:

"George!"

The half-breed slid out of the darkness and sat down beside him. A moment later, thru the open window of her room just above the porch where Bryce and George Sea Otter sat, Shirley heard the former say:

"George, when did you first notice that my father's sight was beginning to fail?"

"About two years ago, Bryce."

"What made you notice it?"

"He began to walk with his hands held out in front of him, and sometimes he lifted his feet too high."

"Can he see at all now, George?"

"Oh, yes, a little bit—enough to make his way to the office and back."

"Poor old governor! George, until you told me this afternoon, I hadn't heard a word about it. If I had, I never would have taken that two-year jaunt around the world."

George Sea Otter grunted. "That's what your father said, too. So he wouldn't tell you, and he ordered everybody else to keep quiet about it. Myself—well, I didn't want you to go home and not know it until you met him."

(Continued Next Week)

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ed—L. M. K.

23—5998

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 at your own valuation. All guaranteed healthy
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High grade helper calves, \$25 ea.
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 Hays C. Taylor, **Embsville, Pa.**

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From A. H. cows and well bred herd under
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bred, free of tuberculosis, bull calves for sale.
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Heathful Buff
Orpingtons



DELAWARE NOTES

Farmers all over the country are becoming deeply impressed with the necessity of organization to protect their interests and to make farming more of a stable business and less of a gambling proposition. The unorganized farmer is the greatest gambler in the world. As a general thing he does not make an adequate profit if any, as the result of his season's work and responsibility.

Yet the consumer benefits nothing by the exploitation of the farmer. The consumer pays as much or more for the farmer's products as he would have to pay were the farmer organized and able to protect his legitimate interest and reap an adequate profit for the labor and care he has sown with his seed. Organization of farmers, such as is going on all over the country, especially in Delaware, will have no adverse effect on the consumers of the farmer's product. Rather it will benefit all classes by increasing the farmer's prosperity and enabling him to become a greater consumer as well as a producer.

Where farmers' organizations have been successfully launched and carried thru the whole community has benefited. They cannot afford to continue to produce food and other commodities for the nation at a loss. They propose that a greater percentage of the price the consumer pays shall go to the producer and less to the middlemen. They will effect that reform, without harm to the consumers, thru organization.—Elsie W. Massey, Sussex Co., Del.

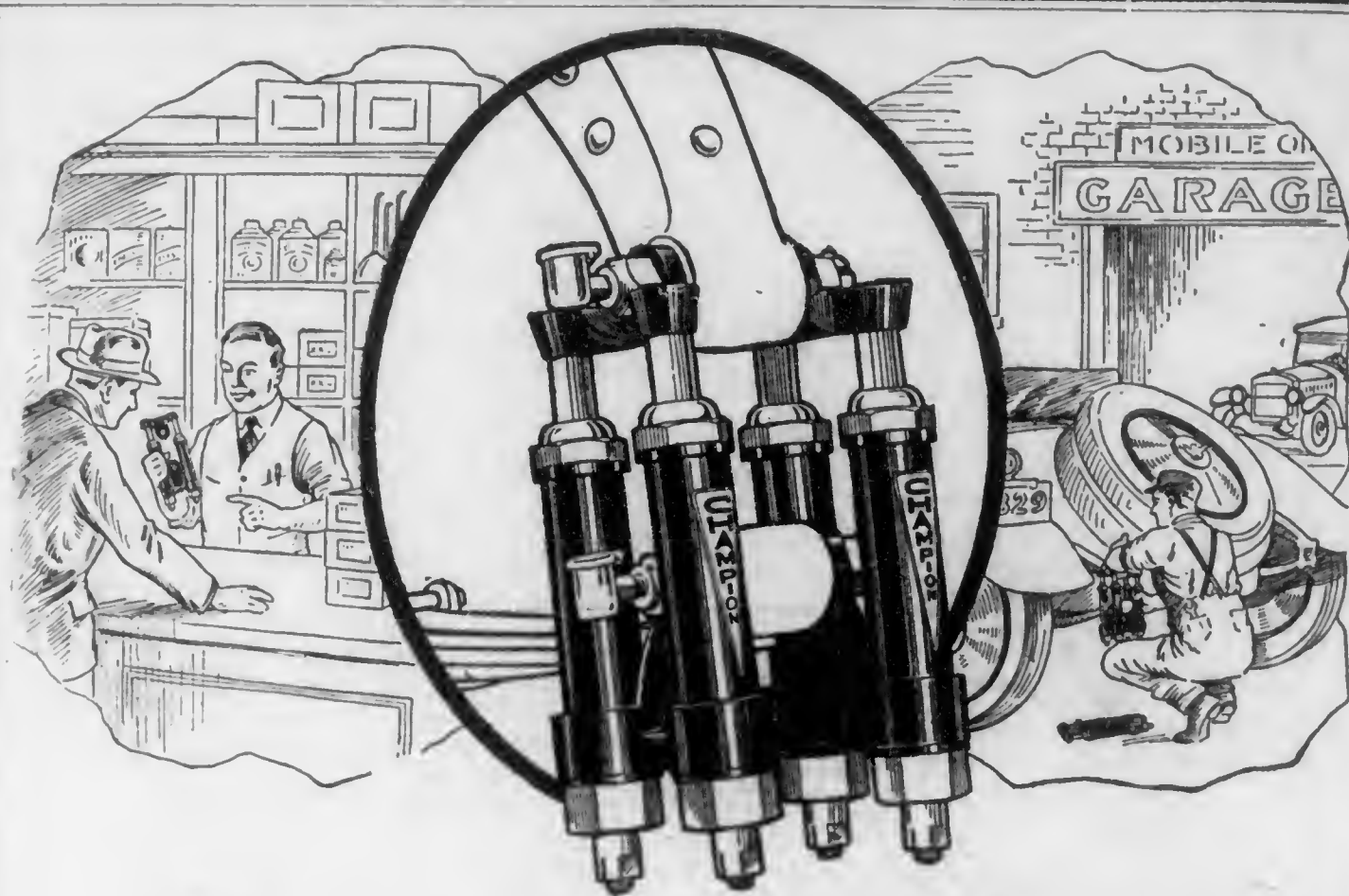
COUNTY NOTES

Lancaster Co., Pa.—The farmers in this section as a rule were not in a hurry about planting corn; some planted earlier but the bulk of the corn was planted after the 15th of May. Some was planted as early as April 15th. Some tobacco was planted as early as May 2d and some has been planted since, but this is exceptional. June first to 15th is popular planting time.

Fruit is the next thing to a total failure but an occasional tree may be found having a few apples. The same applies to peaches, sour cherries or pears. The prospect for berries, such as blackberries, raspberries, and strawberries is good. Potatoes are coming up somewhat irregularly. No complaint of rot in the early planted corn. Grass looks well. Fat cattle moving off slowly at prices around 8 cents. The help question is not bothering the farmers much, help is more plentiful and wages are lower than last year.—J. B. Moore.

SUFFOLK CO. TO HAVE POTATO TOUR

One of the biggest gatherings of farmers ever witnessed in the history of New York's Sunrise County is expected when the potato growers gather for the fourth annual tour, which is to take place on Wednesday, June 29, and Thursday, June 30th. Invitations and announcements are being sent to many sections of the country and the indications are already that the number of visiting seed potato growers, college and extension specialists and other agricultural workers from New York State, Canada, Maine, Vermont, New Jersey, Connecticut and other sections of the country will exceed that of any previous year.



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PUBLISHED WEEKLY

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75 Cents per year

The Wheat Situation in America

A Review of Forty Years of Wheat Prices and Production

By Dr. CLYDE L. KING

Wharton School of Finance and Commerce, University of Pennsylvania

HAS the farmer in this country received a price for wheat for the past forty years sufficient to meet the rapidly expanding needs of our growing city populations?

Just what is the situation as to the production of bread cereals in the United States, as compared with corn and other grain cereals?

It is a matter of common knowledge that the United States is rapidly becoming urbanized. City populations are growing far more rapidly than country populations. Is the production of wheat keeping pace with the growth of city populations?

In 1890, 63.9 per cent of the population in the United States was rural; by 1920 but 48.1 per cent was rural.

The seventeen states with the largest wheat area in 1920 were in order of their acreage: Kansas, North Dakota, Nebraska, Minnesota, Oklahoma, South Dakota, Illinois, Missouri, Washington, Ohio, Indiana, Montana, Pennsylvania, Colorado, Texas, Oregon, Idaho.

In each of these seventeen leading wheat producing states the per cent of rural population declined quite as rapidly as did the rural population of the country as a whole. By 1920 less than half the population of five of these seventeen states lived in the country.

In Illinois by 1920 but 32.1 per cent of the population was rural; in Pennsylvania but 35.7 per cent; in Ohio 36.2 per cent; in the State of Washington, 44.8 per cent; in Indiana 49.4 per cent. Oregon (50.1 per cent) and Colorado (51.8 per cent) were just about half rural. Kansas 80.9 per cent rural in 1890, was but 65.1 per cent rural in 1920 and Idaho, 72.4 per cent rural in 1920, was 100 per cent rural thirty years ago. The rural population in Kansas was actually smaller in 1920 (1,151,293) than it was in 1890 (1,155,907) while the city population had more than doubled. This was true also of Illinois. Her rural population was 2,079,602 in 1920, as compared with 2,116,180 in 1890, while her city population increased from 1,710,172 in 1890 to 4,405,678 in 1920. Indiana and Ohio show the same trend to the cities as do Kansas and Illinois. About the same thing was true of Missouri. Her rural population declined from 1,822,219 in 1890 to 1,817,152 in 1920 during which time her city population increased from 856,966 to 1,586,903.

Forty years ago the following five states led in wheat production in this country: California,

Kentucky, Michigan, Iowa and Tennessee.

Of the five states that led in wheat production 40 years ago, California is now but one-third (32 per cent) rural and Michigan's population but

the seventeen leading states will in the next few years decline relatively as other crops increase in acreage.

In the first chart on Page Two I have shown the relative increase in—

(1) The gross production of wheat in the United States.

(2) The gross production of wheat in the world.

(3) The trend toward a decrease in the exports from the United States, 1880-1918.

(4) The trend toward increasing the per capita consumption of wheat in the United States.

In all these instances the average of the years 1890-1899 is taken as equal to one hundred and each of the forty years is expressed in terms of this one hundred. The per capita consumption is the total production of wheat in this country plus imports, less exports, divided by the total population.

This chart indicates that:

(1) There has been a gradual increase in the total wheat production in the United States from 1880 to 1920. The total production of wheat was 96 per cent in 1880 and 97 per cent in 1882 of the average production in the years 1890 to 1899, inclusive, and 197 per cent in 1915—the highest year—and 119 per cent in 1911, the lowest year, in the last decade.

(2) The production per capita, however, as shown in the chart on Page Two tells another story. Per capita production just about averaged the same from 1890 to 1920 as it was from 1890 to 1900, while all three decades are slightly below the average per capita production for the first half of the decade from 1880 to 1890.

(3) While per capita production is just about holding its own, per capita consumption is tending to increase. Thus, in 1919, the per capita consumption was 144 per cent of what it averaged from 1890 to 1899; in 1918 it was 131 per cent; in 1917, 110 per cent; in 1915, 168 per cent; in 1914, 121 per cent; in 1913, 136 per cent; in 1912, 131 per cent; in 1911, 123 per cent. In 1916, only, in the past ten years, was the per capita consumption (96 per cent) below the average for 1890-1900.

While our wheat production has been, therefore, just about keeping pace with our growth in population for the last forty years production has decidedly not increased as rapidly as has per capita consumption. Inasmuch as we are an



Great Expectations

38.9 per cent rural. Kentucky and Tennessee are still three-fourths rural, but have turned their attention to other crops. Crop diversification has come to be the rule in all these five states. This same tendency is characteristic of many of the seventeen states now leading in wheat production. It is to be expected, therefore, that the proportional acreage put into wheat in each of

exporting country, and since we produce but about one-fifth of the total world supply of wheat, the price of wheat in the United States is dependent more upon total world production than total production in this country. Moreover, the price in each and every month will vary with producing conditions elsewhere. For every month in the year brings its harvest of wheat in two or more countries of the world.

(4) The increase in the gross production of wheat in the United States has just about kept pace with the increase in the total production of the world up to the war period. The relative world production is given for 1891 to 1916.

(5) Our relative exports, save during the war period, markedly declined. In other words, while our per capita wheat production has been fairly constant for forty years, our per capita consumption has increased and hence the relative exports have declined. The spurt in exports during the war was due to change in cereal consumption in this country to meet the needs of the Allies, and is, no doubt, therefore, temporary, for people will inevitably go back to wheat consumption.

(6) The per capita consumption of wheat has been increasing. This has been due to the keeping powers of wheat as compared with other flours and to the American taste for good white bread.

Chart No. 2 compares the crop acreage of the five main cereals in the United States in millions of acres for each of the past forty years. The largest acreage is in corn, then follows wheat, oats, barley and rye, respectively.

The chart reveals that:

- (1) The actual acreage in rye shows little change, save for the war years.
- (2) There has been a small but steady increase in the acreage of barley.
- (3) The acreage in oats has been more than doubled.
- (4) The acreage in corn has almost trebled.
- (5) The acreage in wheat increased around one-fourth, relatively little, as compared with corn and oats.

Corn and oats have gained in acreage far more rapidly than have the bread cereals, wheat and rye.

This is very significant for corn and oats are consumed locally. Our local consumption is expressed in the trend toward the raising of meat animals on small farms rather than on the plains as of yore. This is having its effect on the transportation question as well as on the trend toward diversification of our agricultural industries.

In chart No. 3 I compare:

- (1) The relative per capita production of wheat in each year from 1880 to 1920 with:
- (2) The price in cents per bushel as of December 1st of each year;
- (3) The relative population that is rural;
- (4) The relative decrease in the rural population of the country, and;
- (5) The purchasing power of wheat.

The chart shows:

(1) The per capita production has remained about the same since 1885 but below what it was in 1880. The relative per capita production was 103 in the last decade as compared with 105.1 from 1880 to 1889, inclusive. (The yield per acre has slightly increased being about 10 per cent for the last decade over the base decade of 1880 to 1889, inclusive).

(2) The per capita production has not kept pace with the actual increase in the rural population. In other words the rural population are

not as a rule going into wheat production. It may be that part of this is due to the use of machinery rather than labor in the production of wheat. Even in that instance the investment is heavier and hence the importance of the declining purchasing power of wheat is of no less significance than when the price of wheat represented a slight peak in the war period and then this peak was but slightly above the high peak of the last half of the decade 1890-1900. More significant still the purchasing power of wheat on December first last was the lowest that it has ever been in this forty-year period. The purchasing power of wheat, it will be noticed, runs about the same as does the per capita production of wheat. Neither have increased in the forty-year period. The price received by farmers for wheat has been based on the cost of producing wheat in new and unused lands in the West and not on the cost of producing wheat on older lands where fertilizers have to be used and where labor costs were higher.

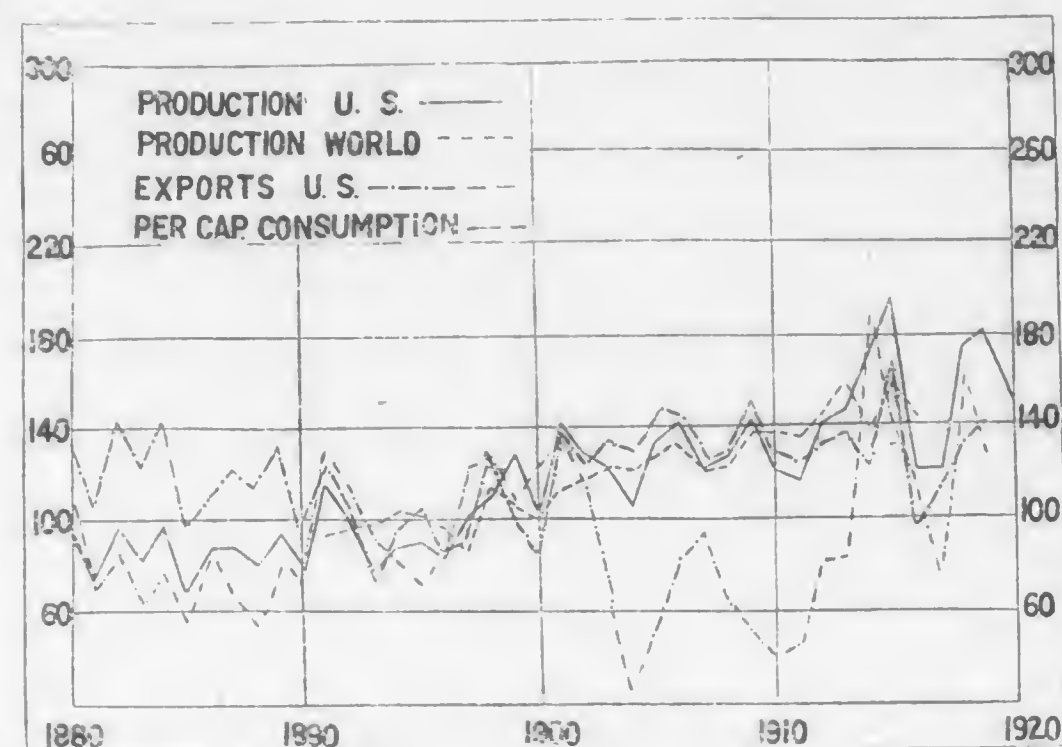


CHART NO. 1—The relative increase in the production of wheat in the United States, the production of wheat in the world, the exports of wheat from the United States and the per capita consumption of wheat in the United States 1880-1920. The average of the years 1890-1899, inclusive, is taken as equal to one hundred.

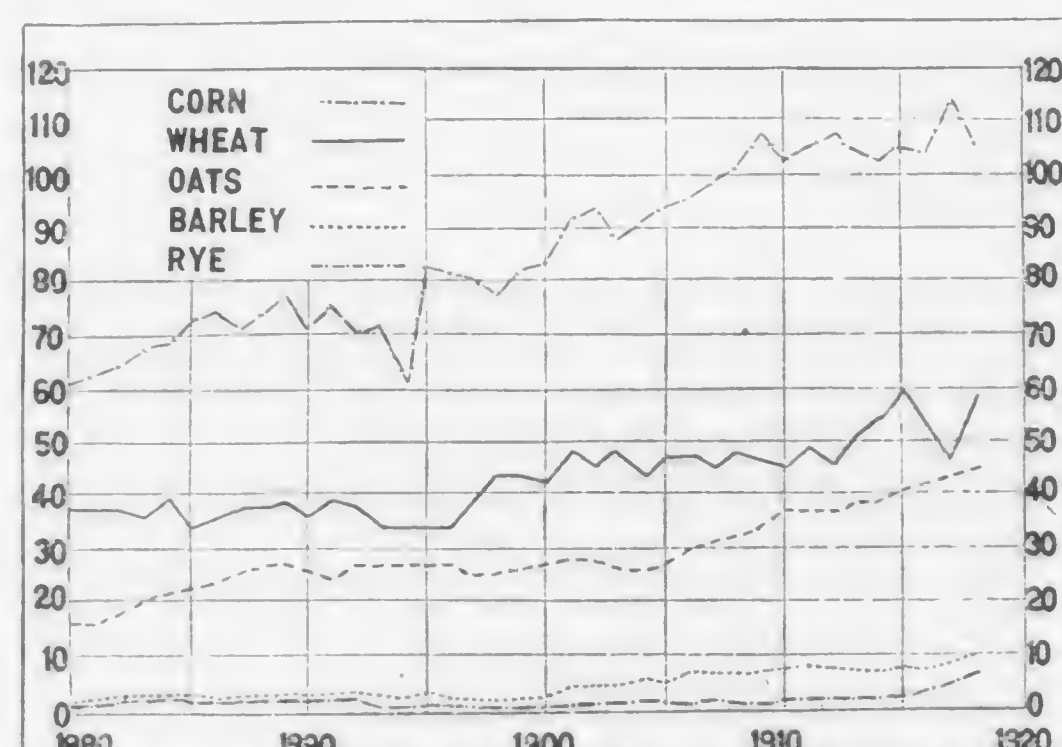


CHART NO. 2—The crop acreage of corn, wheat, oats, barley and rye in millions of acres, 1880-1920

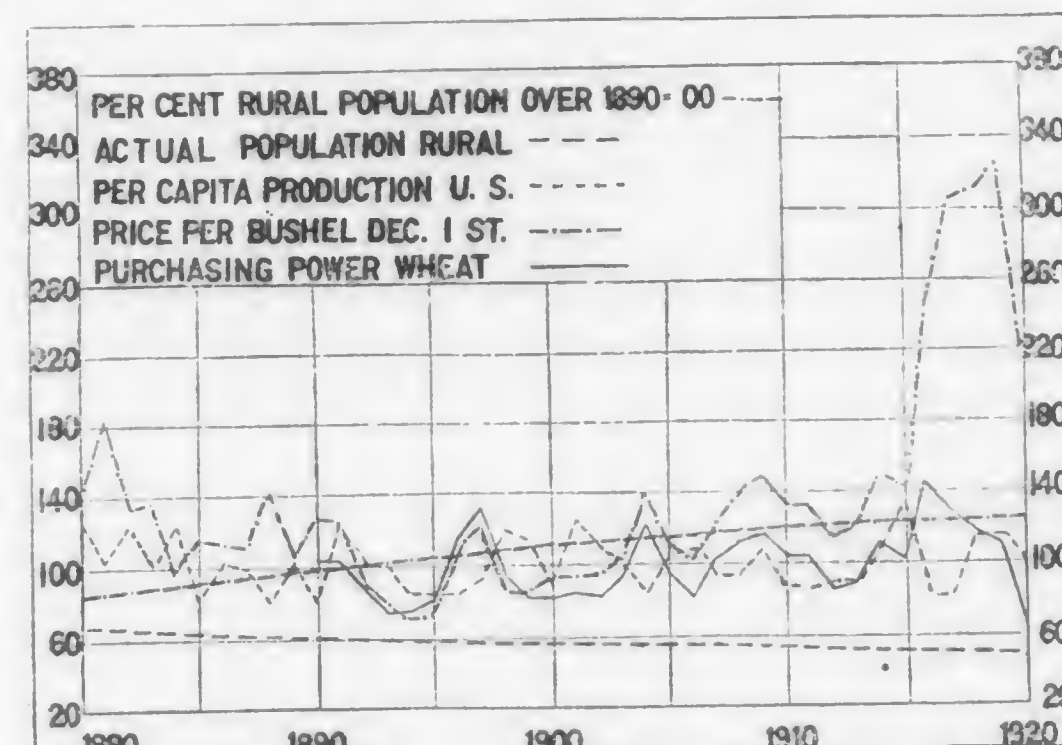


CHART NO. 3—Relative per capita production of wheat in the United States, the relative price in cents per bushel as of December first each year, the relative purchasing power of the wheat 1880-1920. (The average of the years 1890-1899 inclusive is taken as equal to one hundred for the per capita production of wheat, the relative price per bushel and the purchasing power of the wheat dollar. The Census in 1890 is taken as equal to one hundred for the actual per cent of the population that is rural and for the relative decrease of the rural population as compared with 105 total population of the United States)

sent wages primarily.

(3) While per capita production of wheat has remained constant and the average yield per acre has increased but slightly the per cent of our total population that is rural has been gradually declining. Wheat production, that is, has been increased by the use of machinery and sea-

sonal and home help, and not by increasing the rural population itself.

(4) The purchasing power of wheat (1890-1920) was determined by dividing the price of wheat by the index number for all commodity prices. Judged by this test the purchasing power of wheat has remained constant save for a slight peak in the war period and then this peak was but slightly above the high peak of the last half of the decade 1890-1900. More significant still the purchasing power of wheat on December first last was the lowest that it has ever been in this forty-year period. The purchasing power of wheat, it will be noticed, runs about the same as does the per capita production of wheat. Neither have increased in the forty-year period. The price received by farmers for wheat has been based on the cost of producing wheat in new and unused lands in the West and not on the cost of producing wheat on older lands where fertilizers have to be used and where labor costs were higher.

In 1899 wheat was produced in 5,737,322 farms in this country. Ten years later, the actual number had increased to 6,361,502, an increase of 10 per cent, as compared with an increase of 21 per cent in the total population of the country in that same period.

In 1909, 35.8 per cent of all the farms in this country were growing wheat, and 12.7 per cent of all improved farm lands was used for growing wheat. Ten years later, but 22.9 per cent of all the farms, and but 9.3 per cent of all improved farm lands were used for wheat production. The average acreage in wheat per farm was 25.6 in 1899; in 1909 it was 30.3.

In the ten year period from 1891 to 1910 the United States produced 20.7 per cent of all the total wheat production of the world. In the ten-year period ending in 1917, this country produced 19.5 per cent of the total world production of wheat, a decline of 1.2 per cent.

Before American farmers can get a price for wheat that will be a fair price the price must be made in this country and not in Liverpool as in the past. A Chicago price made when domestic demand is equal to or greater than domestic production, will be higher at least by three thousand miles of freight, insurance risk and foreign middlemen's profits, to say nothing of the higher prices resulting from other factors in a domestic market.

The ultimate securing of a fair wheat price must depend upon building up city populations throughout the United States so that domestic demand will be equal to domestic supply.

In the meantime everything possible should be done to build up the buying power of the foreign countries which buy our wheat and raise the standards of living of our workers so that they may buy wheat bread.

The outstanding facts about the wheat situation are:

- (1) Our per capita production is not keeping pace with the per capita consumption.
- (2) We must build up domestic markets before we can export to have a price that will be fair to our farmers.
- (3) The actual purchasing power of wheat has not increased in forty years, the increase in production coming from the development of new lands and not from profitable wheat growing on older lands. In the light of such facts as these it is not to be marveled that the farmers are determined to control their marketing processes themselves so as to be sure that they will get what they should for wheat.

The Value of Nitrogen Fertilizer

Availability of the Plant Food As well As Price Should Be Considered in Buying

By Dr. J. G. LIPMAN

Director New Jersey Experiment Station

THE present article deals with nitrogen, in many respects the most important constituent of commercial fertilizers. It is customary to refer to nitrogen in fertilizers as being either inorganic or organic in character. This means that the nitrogen is either mineral in its nature, like nitrate of soda, or sulfate of ammonia, or is derived from animal or vegetable products and is, therefore, called organic. The two chemicals just mentioned, nitrate of soda and sulfate of ammonia, are two of the great staples among the nitrogenous fertilizers. The first of these furnishes about 30 per cent of all the nitrogen used in mixed fertilizers. The second furnishes not very far from 20 per cent of all of the nitrogen used in mixed fertilizers. The two together will, therefore, supply about half of the total nitrogen in mixed goods. Packing house by-products, representing the different grades of tankage, and cottonseed meal are two of the other important sources of nitrogen. The tankages and dried blood contribute in all about one fifth of the total nitrogen used in the manufacture of mixed fertilizers, while cottonseed meal contributes nearly one-sixth of the mixed fertilizer nitrogen. The important point about the entire matter lies in the fact that the nitrogen in these different materials is not equally efficient for the purpose of crop production. To use the term employed by the soil specialists, there is much difference in the "availability" of nitrogen derived from different sources.

Numerous experiments in the United States and Europe, as well as in Japan, India and South Africa, have demonstrated very clearly that it is practically impossible to recover in the crop all of the nitrogen applied in fertilizer or manure. Under average conditions in humid climates about two pounds out of three applied in the form of nitrate of soda may be recovered. In other words, only about 65 per cent of the nitrogen in nitrate of soda, nitrate of lime or nitrate of potash are returned in the crop which is harvested. The rest is not recovered. The situation is even less favorable when the nitrogen is derived from sulfate of ammonia or other ammonia salts, and still less favorable when it is derived from tankage or other animal products. The recognition of this fact has led students of soils and fertilizers to arrange tables of so-called relative availability in which nitrogen obtained from different materials is compared with nitrate of soda in respect to availability. For instance, if the return from 100 lbs. of nitrogen in the form of nitrate of soda is called 100 per cent, then the corresponding return from 100 pounds of nitrogen in ammonia salts would be about 90 or less; the return from tankage would be about 70 or less, and the return from barnyard manure of good quality about 50 or less. Low-grade materials, like low-grade tankage, garbage tankage, leather meal, wool waste, etc., would have even lower values, some of them not above 25 to 30. Naturally, this raises a question in the mind of the farmer as to the actual value to him of the different nitrogenous products. He recognizes, as he thinks of the matter, that there is a difference between so-called commercial values and agricultural values of nitrogenous plant food. By commercial value we would understand, of course, the value of a product as determined by market conditions. Nitrate of soda, selling in carlots at this writing at about \$60.00 per ton, cost \$90.00 or \$95.00 per ton only a year ago. What was responsible for the relatively high price in 1920 and the relatively low price in 1921? Obviously, we are dealing with a question of demand and supply. Fertilizer manufacturers not only compete among themselves for their supply of nitrate, but also with the chemical industry, the explosive industry and other industries where nitrate is used. The same would apply, let us say, to tankage, where the livestock feeder and the fertilizer manufacturer would compete for the material. The market price is determined by the demand and supply

and need not, therefore, have any direct relation to the agricultural value, which depends solely on the actual crop increase which may be obtained from the use of any given quantity of plant food. The commercial value is, therefore, the market value, while the agricultural value is the crop value. It is unfortunate that commercial and agricultural values bear no direct relation to one another in so far as fertilizer nitrogen is concerned. In the case of phosphoric acid and potash the situation is different. There the value of the plant food is more accurately measured by availability or what it may actually do under average conditions in increasing crop production.

The many factors which enter into determining the market price of nitrogen tend to confuse the purchaser of fertilizers and to make it difficult for him to secure the best return on his investment. A simple calculation may help to bring out this fact. Assuming that nitrate of soda can now be bought in carload lots at \$62 per ton, we find that a pound of nitrate nitrogen would cost us 20 cents. If ammonia nitrogen has an availability of 90 per cent, a pound of nitrogen in the ammonia form would be worth 18 cents. Tankage-nitrogen, with a value of 70 per cent, would be worth 14c per pound; manure nitrogen, with an availability of 50 per cent, would

nitrogen is worth 10 cents per pound as compared with the present cost of nitrate nitrogen. The average ton of barnyard manure will contain 10 pounds of nitrogen, which will, therefore, have a value of \$1.00. Good manure will also supply about 10 pounds of potash and 5 pounds of phosphoric acid, worth, at present prices and with due regard to availability, not much more than 50 to 60 cents per ton. This means that as a fertilizer farmyard manure is not worth more than about \$1.50 per ton. However, the manure contains also organic matter and vast numbers of bacteria, which may or may not have a very considerable value, depending on local conditions as to soil, climate and crop. It is scarcely necessary to elaborate on this particular point beyond stating that the disregard of the differences in quality of nitrogen from different sources is costing the farmers of the United States many millions of dollars annually.

The important practical applications of the facts noted above may be summarized as follows:

1. A pound of high-grade nitrogen will go much further than a pound of low-grade nitrogen. Hence, nitrogen in nitrates and ammonia salts will, under average conditions, prove much more efficient and much more economical than nitrogen derived from tankage, fish or cottonseed meal.

2. Where nitrogen is deficient in the soil a small amount of high-grade nitrogen will do the work of a larger amount of low-grade nitrogen. However, the average farmer could well afford to use more nitrogen in his mixed fertilizers than he is now using for the growing of vegetables, potatoes and tobacco, and of fruit and small fruits on the lighter soils.

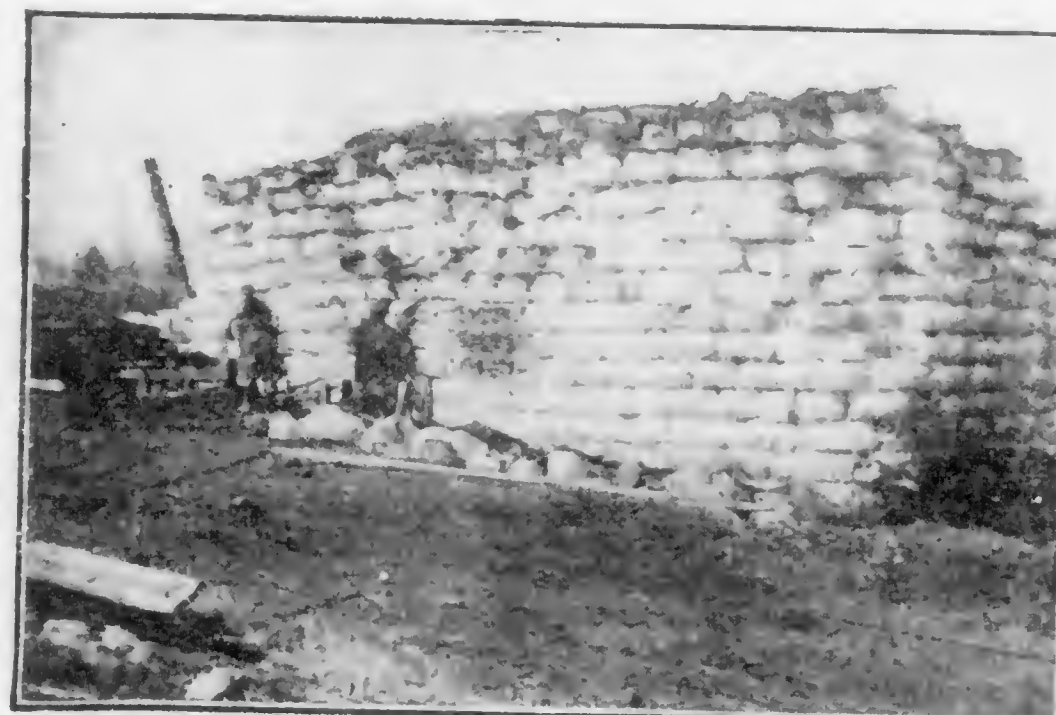
3. Nitrogen in green clover and other green legumes has a relatively high availability. In fact, nitrogen in green clover is practically as available as nitrogen in tankage. For this reason, nitrogen in commercial fertilizers should at best be regarded as a supplement to nitrogen which the farmer may find it practicable to obtain from the air by means of leguminous green manures.

4. Because of its ready solubility, the agriculturally high-grade nitrogenous fertilizer is easily taken up by the crop and at the same time is more readily subject to leaching out from the soil. Hence, where larger quantities of nitrate or ammonia nitrogen are employed, they should be used with discrimination. In the case of both nitrate of soda and sulfate of ammonia, as well as of other nitrates and ammonia salts, so-called fractional applications may prove most economical. By fractional applications is meant the use of only part of the nitrogen at planting time and the use of a further amount later in the growing season. We often refer to fractional applications as "side dressings."

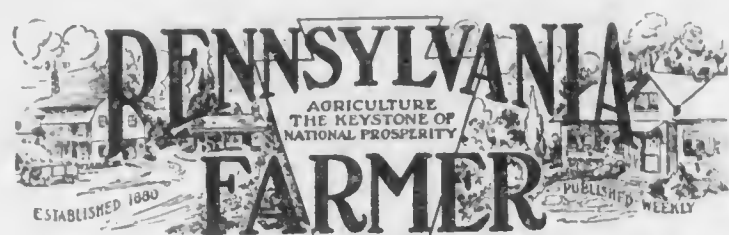
5. It would pay every farmer to inquire not only as to how much nitrogen the fertilizer which he is to use contains, but also as to the kind of nitrogen contained in the mixture, whether it be nitrate, ammonia or organic, and also as to the relative availability of the nitrogen in the organic portion.

SECRETARY WALLACE TO VISIT NEW JERSEY FARMERS

New Jersey farmers will have an opportunity to make the acquaintance of Secretary of Agriculture Henry C. Wallace and to learn first hand the views of the new Federal administration on big agricultural problems, at the annual field meeting of the State Board of Agriculture, which will be held at the home of its president, United States Senator Joseph S. Frelinghuysen, at Raritan, on Saturday, July 16. Secretary Wallace with United States Senators Capper, of Kansas, and Ladd, of North Dakota, leaders in agricultural advancement in their respective states, will be the guests of the New Jersey Senator for the day and will make addresses.



Fire Destroyed the Ice House But Not the Ice



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PHILADELPHIA, PA., JUNE 11, 1921
VOLUME 19 NUMBER 24

OUR JOB is to serve our readers. Whenever you are puzzled, write to us and we will help you if we can.
—The Editors

They are never alone who are accompanied by noble thoughts.
—Sir Phillip Sidney

The Prize Contest

ANNOUNCEMENT was made in the May 28th issue of Pennsylvania Farmer of a prize contest for boys' and girls' club members and vocational school students of the state. The contest is open to all club members and vocational school students who attend the annual Young Farmers' Week at State College, June 20-24. We offer ten cash prizes for the best articles written by these young people describing their activities and results in connection with their club and school work. The first prize of \$10 will be awarded to the writer of the article which is judged to be best according to the scale of points given below. The second prize of \$5 will be awarded to the writer of the second best article. Eight dollars will be awarded as the third prize, and so on, down, the tenth prize being \$1. Pennsylvania Farmer reserves the right to withhold any or all prizes if articles are not submitted which are deemed worthy of reward. The rules and conditions to be observed by contestants are listed below:

- 1—The contest is open to both boys and girls.
- 2—Each contestant must have been a student in a vocational school or have been engaged in boys' or girls' club work in connection with the Farm Bureau programs during the past year.
- 3—Each contestant must have attended at least a part of the activities, for young people at State College during the June Farmers' Week, June 20-24, 1921.
- 4—Contestants may choose their own subjects, but each paper must deal with the activity in connection with club or vocational school work from which the writer believes he derives or has derived the greatest benefit.
- 5—No essay shall exceed 700 words in length.
- 6—Write on one side of the paper only, using typewriter or pen and ink.
- 7—All papers must be in the office of Pennsylvania Farmer, Editorial Department, 261 South Third Street, Philadelphia, by noon, July 15, 1921.
- 8—Papers will be judged upon: (a) Their suggestiveness and educational value, 50 points; (b) Their style and grammatical excellence, 30 points; (c) Their execution, punctuation and general appearance, 20 points.

We anticipate a large number of articles which will be interesting and valuable. Do not disappoint our readers.

Pennsylvania Farmer

Our Daily Bread Supply

Farmers Not the Only Ones Who Should Be Interested in Maintaining Adequate Wheat Prices

THE PEOPLE of the United States are not given to thinking problems thru to the end. We are inclined to consider questions, big and little, with reference only to immediate conditions and necessities and fail to take a long look ahead and see where present tendencies are likely to land us.

The article by Dr. Clyde L. King, a professor of economics in the Wharton School of Finance, appearing on the first page of this issue, should command the serious attention of all classes of people in this country. The question of a nation's bread supply is one that concerns everyone, because it lies at the very foundation of national security. The Great War proved that fact conclusively and the lesson must not be forgotten. While it is earnestly to be hoped that the world will never again see another such calamity, yet the part of wisdom would be to prepare against the possibility by maintaining a sufficient and independent home food supply.

While there is cause for congratulation in the figures supplied by Dr. King in that they show a continued increase in the production of wheat despite the rapid decrease in the proportionate number of farmers yet these same figures show that the surplus production has gradually decreased, and it is only a matter of time until we must import wheat if the present tendency is allowed to continue.

Superficial critics will be inclined to ask, what is the matter with the American farmers? Why is there danger that he may not maintain a safe surplus margin? The answer is, because the average price of wheat fails to return costs and a profit when produced on high-priced land, by high-priced labor, and in competition with other products. The figures show that the purchasing power of a bushel of wheat has not increased in forty years, while the cost of production has greatly increased.

There is another item that must not be overlooked. It is generally known that the world's wheat price-level is fixed by the price in Liverpool. The American farmer gets that price, less the freight from here to Liverpool. If the time comes when this nation must import wheat the price will pay the Liverpool price, PLUS the freight from Liverpool here.

Those who criticize and oppose the activities of farmers in their efforts to establish independent and co-operative marketing systems, and the "Agrarian Bloc" forming in Congress, may find a partial explanation in the menace of a possible future wheat shortage. Farmers clearly see the cause of the present tendency and they also recognize the extent to which America's security would be jeopardized if the time comes when the nation does not supply itself with bread. Even the most radical free-trader will agree that a nation which must depend upon other countries for its fundamental necessities is in a less safe position than one which produces its own, and wheat is the first of these necessities. Wheat can be and is being raised in many other countries more cheaply than here, but it is not good policy to become dependent upon outside sources.

Again, the superficial tho sympathetic person may fall into the error of thinking that a tariff duty on wheat is all that is required to protect the industry of wheat raising. That will probably be true when we reach the point at which our production and consumption are equal. But, in the meantime, while we still have a surplus to export, and while the price in America is governed by the price in Liverpool, tariff duties alone will have little effect on the price in this country. The encouragement of an ample production of wheat at home is a matter for clear thinking and prompt action.

What are we going to do about it?

Farm Loan Bonds

THE DECISION lately handed down by the Supreme Court affirming the constitutionality of the Federal Farm Loan Act has given a new impetus to the work of the Farm Loan Banks. In spite of the criticism made by banking institutions and others to the effect that special banking facilities for farmers are not needed, the pop-

ularity of the Farm Loan Law is shown by the great demand and hundreds of millions of dollars loaned in the short time since its enactment.

The law opens up an opportunity for two classes of farmers—borrowers and lenders. Since the bulk of the money loaned is secured from the sale of bonds based upon first mortgages on farms, an excellent opportunity is offered to farmers who have money to invest to place it on these bonds. They are absolutely safe, and since the investment and the income are both exempt from tax the five per cent which they bear compares favorably with other equally safe investments. If all farmers who have money to invest would place it in these Farm Loan bonds instead of some speculator's wild-cat scheme, as many have done, they would find the result much more profitable to themselves and at the same time they would be contributing to the success of this much-needed agricultural institution.

Pure-Breds in Pennsylvania

THE NECESSITY for a campaign to increase the purebred livestock on the farms of the United States is shown by the figures of the last census. The advance returns for Pennsylvania have just been received and we were surprised at the small number as compared with the total number of farms and the total number of each kind of livestock in the state.

There are something over 202,000 farms in Pennsylvania, but only 22,456, or about 11 per cent, contain any kind of purebred stock. There are 3632 purebred horses, about one-third being males and two-thirds females, found on 1513 farms. It is interesting to note that almost two-thirds of the purebred horses are Percherons. Others in order of numbers are Belgian, Thoroughbred, Standard Bred, Clydesdale, Hackney, Shire and German Coach. All others number 662.

Some purebred beef cattle are found on 1513 farms with a total of 6101 head. More than half of this number are Shorthorns, there being 3676 of this breed. Others are: Polled Durham, 937; Hereford, 686; Aberdeen Angus, 428; Devon, 114; all others, 260.

There is an average of about five purebred dairy cattle on each of 15,194 farms, the total number of purebreds being 75,189, or about one animal to three farms. Almost two-thirds of these are Holstein-Friesian. Others in order of numbers are: Jersey, Guernsey, Ayrshire and Brown Swiss. All other breeds total 2252.

Shropshire sheep are found on the greatest number of farms, 464, but Hampshire Down sheep are more numerous than any other, with Dorset and Merino in third and fourth places.

Only 31 per cent of the farms report having purebred swine. The total number of purebred hogs is given as 34,775, divided as follows: Berkshire, 14,055; Chester White, 7489; Duroc-Jersey, 5292; Poland China, 4669; Hampshire, 1590; Spotted P. C., 118; Yorkshire, 247; all others, 1405.

Our Washington Letter

The dairy cow is the basis of one of the most important manufacturing industries in the country. A preliminary statement of the 1920 census of manufactures shows that there are 3337 butter factories, 3730 cheese factories and 410 condensed milk factories, a total of 7677 factories engaged in the manufacture of dairy products. The value of the annual output of these dairy plants is given as follows: Butter, \$583,216,000; cheese, \$143,708,000; condensed milk, \$339,570,000, a total of \$1,065,794,000.

The industries that are larger than dairy manufactures are automobiles, boots and shoes, bread and bakery products, railroad cars, men's and women's clothing, cotton goods, flour and grist mill products, iron and steel products, lumber and lumber products, packing house products and shipbuilding.

When the hearings on the Smoot general sales tax were begun there was apparently a strong sentiment in the committee for the proposition. As the hearings advanced, arguments in opposition to the tax, made by many able economists and tax experts, were so conclusive that there is little probability of the sales tax bill getting thru either the Senate or the House. The excess profits tax may be repealed, but there is an increasing sentiment against repeal.

In discussing the road question Gray Silver, Washington representative of the American Farm Bureau Federation, said: "The roadways of the country should be considered as a whole and a comprehensive plan should be provided, which, in a reasonable term of years should give our people good roads everywhere."

June 11, 1921

June 11, 1921

Pennsylvania Farmer

A number of leading wool growers, including representatives of the National Sheep and Wool Bureau of America, and several state wool growers' associations, are in Washington this week, attending hearings on the truth in fabric bill. It was the contention of Gray Silver, Washington representative of the American Farm Bureau Federation, that two-thirds of the woolen clothes manufactured are shoddy. We do not allow the manufacturer of rebuilt auto tires to sell them as new; we do not permit oleomargarine to masquerade as butter; we have pure food and pure drugs laws, and the farmer along with the consumer and merchant wishes to see a truth in fabric law which will protect them.

Owing to the attitude of the Secretary of the Treasury in opposing this revolving fund proposition, the Congressmen representing the agricultural districts have decided to favor a proposition to have a fund of \$50,000,000 created in the Treasury which will be virtually a call loan. The secretary can loan this money to the Farm Loan Board, and it will be practically the same as a revolving fund. The Congressmen are going to push this proposition, the bill to increase the interest rate on farm loan bonds to 5 1/2 per cent, and the Strong bill to raise the limit of farm loans from \$10,000 to \$25,000.—E. E. Reynolds.

HARRISBURG LETTER

No Expansion of Work.—Reduction of appropriations for the State Department of Agriculture will prevent expected expansion of the work of the Department's Bureau of Markets; restrict some research work planned by the Bureau of Animal and Plant Industry and compel doubling up of men in various lines of activity of the department, while it is possible the program for surveys may be curtailed. Along with almost every branch of the state government the agricultural department suffered loss of appropriations and some plans for the coming two years will not be carried out. About the best that can be done is to conduct business much as it has been with exception of the farmers' institutes, which have been eliminated. The state authorities will look to State College to supply talent for the educational work, which has been conducted direct from the offices of the department since 1894.

To Name Commissions Soon.—Contrary to opinions Governor William C. Sproul will probably name members of various commissions early and ask them to meet before the end of summer and outline their work. The Welfare Department Board and State Council of Education will be among those named promptly as certain work will have to be undertaken by them. The State Fair Commission, which is to talk over a fair site and plans for the future, is to be named during the summer.

The Constitution Question.—Present indications are there will be two or three separate ballots for the primary election and that the question of holding a constitutional convention will be voted upon on a slip of paper all its own. Of course, this may be changed when the time comes for making up the ballot. Interest in the question of holding a convention is growing and bids fair to be a very fruitful subject of discussion during the summer months. Incidentally, there are some people getting ready to make a drive for the adoption of a system for control of charities receiving a share of state money so that they furnish so much free service per \$1000 or are reduced in number.

Grain Doing Well.—June 1 reports to the Department of Agriculture indicate wheat and rye are doing well generally and unless the fly or rust get in their work there should be a big crop. While some districts in the "million bushel counties" cut down their acreage the fine appearance of the grain promises to make up for the loss. The acreage being put into corn is also said to be good. In some sections reports on fruit are better and there will be a fair sized pear crop.

New Stallion Law.—The State Bureau of Animal Industry is getting ready to put into effect the new law which will encourage breeding of better horses and Dr. T. E. Munce, the director, has taken steps to bring it to attention of all field men. The

registration of stallions and jacks has shown an increase lately. Dr. Munce is perfecting plans for some surveys in sections where poultry is extensively raised to ascertain the situation in regard to tuberculosis in chicks.

Cover Insurance Crops.—According to statements by officials of the State Department of Insurance there is now no bar to insurance of crops in Pennsylvania against loss by frosts, blight, insects, pests or anything which can damage a crop, provided a company will insure. The new code covers everything that is insurable, even to insuring against loss of freight while being transported by airship.

NEW YORK LETTER

Great Meeting of Cattle Breeders.—The biggest meeting and sale of the National Holstein Breeders' Association has ever held is in full swing. Former Governor Frank Lowden of Illinois has been elected as president for the coming year, and George E. Stephenson of Scranton, Pa., vice president. Dissatisfaction with the administration of the past year caused a decided storm in the convention and the first of the three days' sale was postponed in order to settle several problems that came up for discussion. Michigan cattle took the \$500 prize offered by the New York State Fair Commission for the best state exhibit. New York breeders did not compete for this, though they had twice as many animals as any other state. Pennsylvania ranked second, Canada was third and Washington, fourth. Kansas City will entertain the next annual meeting.

Milk Disturbances.—Now and then some farmers are withdrawing from various League plants, not understanding the need of patience while the immense new pooling plan is being worked out. Shifts are being constantly made as new plans are acquired by the League, or as temporary plans are adopted. A dealer's milk war is on in Auburn with milk being sold as low as 7 cents. Butter prices went as low as 28 cents this week and cheese to 15 cents. On this basis Class 4 milk will bring but 90 cents for 100 lbs. This might have ruled the entire milk price disastrously. As it is Class 1 milk is bringing \$1.95 per 100 lbs. under the pooling plan. The League is forced to ease for surplus milk until this disappears about July 1. A fairer basis for handling non-pooling members is being sought and after October 1 the sale of non-pooled milk may be discontinued.

School Survey Ended.—The work of the rural school committee of 21 is nearing completion as the survey made by experts is near its close. Several weeks will be required to compile the facts collected so the education department may be considered. The situation, Divisional meetings have been held and others may be by the committee.

Drought Conditions.—After about 3 weeks of drought more forest fires broke out in the Adirondacks last week than in many years. Crops were badly in need of water when heavy showers came the first of the week, accompanied by electricity which burned many barns and killed numbers of animals.

NEW JERSEY NEWS

No Increased Pay.—The State of New Jersey will not allow any increased pay to its employees for the fiscal year beginning on July 1 next. This has been announced to the New Jersey Civil Service Commission by State Comptroller Newton A. K. Bugbee, and the commission has accordingly sent a notification of the intention of the Commonwealth to all of the attaches. New civil service regulations stipulate, that no change shall be made in either the classification or positions or schedule of salaries during the coming year, while they eliminate extra compensation and bonuses, provide that all new employees shall receive minimum and not maximum salaries, and establish a definite policy regarding vacations and leaves of absence of attaches of the state with or without pay.

Commissioner Retiring.—Dr. Calvin N. Kendall, who has been the State Commissioner of Education for New Jersey for ten years, retires on June 30th, owing to ill health.



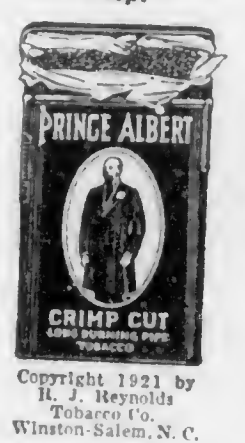
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Look at your wheat before harvest

Has it long, full heads of sound grain? Is the straw stiff enough to stand? Will it yield as much as you hoped? Is the clover or grass stand in it good? If not, think over the matter of using a fertilizer that will help you.

For six years wheat fertilizers have contained little or no Potash. Potash prices are now much lower. Enough German Potash has now come forward, so that those who wish can buy wheat fertilizers with

4 TO 6% POTASH

Go at once to your dealer and tell him what you want and insist that he get it for you when the fertilizer salesman makes his first call.

Potash Pays

SOIL AND CROP SERVICE POTASH SYNDICATE, H. A. HUSTON, Manager
42 Broadway New York

B-K

Bacilli-K
Trade-Mark
 The Sentinel of Sanitation

Sure Germ Killer

Scientifically correct for prevention and treatment of:

Contagious Abortion
 Barrenness
 Retained Afterbirth
 White Scours

or anywhere a Disinfectant is used

Powerful
 Harmless
 Clear and
 Clean

B-K is a concentrated pure Sodium hypochlorite — such as is endorsed and used by leading veterinarians, physicians and breeders.

Philadelphia Farmers' & Merchants Supply Co.,
 "Market", Third Street
 General Laboratories
MADISON, WIS.

Gal. and 5 Gal. Pks.

URAL LEAF TOBACCO—Kentucky's finest. 3
 ounce, 100 cigs., chewing, smoking, \$1.15 lb.
 smoking, \$2.20 lb., \$2.50 lb. **HANCOCK LEAF**
ACCO ASS'N, Dept. 19, Hawsesville, Kentucky.

Dried Beet Pulp

A succulent vegetable feed.
 Palatable and nutritious.

THE LARROWE MILLING CO.
 DETROIT, MICH.

\$160.

(on legs)

\$175 (truck)
 \$190 (motor truck)

"supreme with men who know"

(Accent on the "pay")

PAPEC

SILAGE CUTTER

A PAPEC for 1917!—because it's best-liked and highest-selling. Hence big production—low manufacturing cost to us, low buying price to you. Regular K-16 latest model for about: capacity 2 to 6 tons per hour; 1", 1 1/2", 3" and 1 1/2" cut; operated by 3 ton, h. p. gas engine; complete on legs with self-feed table, indestructible cutting wheel, 30 feet of blower pipe with malleable collars, curved elbow for top extra set of knives—*only \$150* (2150 on 2-wheel truck, \$250 on 4-wheel truck) L. O. B. Shortsville, N. Y. This guarantee protects you:

"If you guarantee a Papec Cutter to run and blow and cut every silage in the best of any silo, in the way proper, provided the spec't of the cut up will not drop and fall below 10 c.p.m. We also guarantee that any Papec Cutter will cut and blow more any silage in the same power than any other blower cutter."

Order from this advertisement
 Or if you need a larger cutter than K-16, write today for catalog and price on other sizes. Our price lists on all sizes.
Pepec Machine Co. 178 Main St. Shortsville, N. Y.

CALCITE BRAND
MICHIGAN LIMESTONE
 THERE'S A PROFIT
 FOR YOU IN
 EVERY TON

**OVER 99%
 PURE CARBONATE**

THE foundation of agricultural prosperity is an adequate supply of lime in your soil. Upon this largely depends the benefit which your crops get from fertilizing, seeding and cultivating.

No other product for liming your soil is so efficient, so economical, so reliable as

MICHIGAN PULVERIZED LIMESTONE

It is a soft, porous, High Calcium Carbonate of Lime, quickly soluble and over 99% pure carbonate.

CALCITE BRAND
MICHIGAN LIMESTONE
OVER 99% PURE

Send for booklet—"Sweetening Sour Soils"

MICHIGAN LIMESTONE & CHEMICAL CO., Inc.
 Coal & Iron Exchange, Buffalo, N.Y.
 Largest Agricultural Limestone Mill in the World. Capacity 1800 tons per day

If You Are Falling Down in Crop Production

let us tell you some of the remarkable results attained in the use of

BUG DEATH APHIS



An Insecticide and Fungicide that is Something Better Than Arsenic

WHITE TODAY

Danforth Chemical Co.
 LEONISTER, MASS. EST. 1896.

My Fence Prices
LOWEST

Just write and get my new Bargain Fence Book—see the big money you can save this year by buying BROWN FENCES. Complete catalog, prices, and full description of all types of fences. Also full description of BROWN FENCE RAILROADS, and full description of BROWN FENCE RAILROADS, and full description of BROWN FENCE RAILROADS.

THE BROWN FENCE & WIRE CO., Dept. 1121, CLEVELAND, O.

WITTE
LEVER CONTROLLED
Log Saw \$125 F.O.B.

Embrace, Saw, Etc., all complete. From Pittsburgh add \$9.00. Ask for Form, Folder FREE.

WITTE ENGINE WORKS
 2040 Oakland Avenue
 Kansas City, Mo.

FINE FIELD GROWN Cabbage and Tomato Plants.
 500, 55c; 1,000, \$1.00; 2,000, \$1.25; 5,000, \$2.75; 10,000, \$5.00; 25,000, \$12.50; 50,000, \$25.00; 100,000, \$50.00. Shipped anywhere. Postage prepaid. Well packed. Shipped anywhere.

TIDEWATER PLANT CO., FRANKLIN, VA.

Sandwich Engines
 Built By Experts Built To Last
 Give Excess Power Save Fuel
 Gasoline or Kerosene

1 1/2 H. P. to 12
 EVERY ONE TESTED

These are just a few of the good reasons why an inspection of these Engines would be worth money to you.

Call or write for full information from our Eastern Representatives
Crain Pump and Lumber Co., 623 Arch Street, Phila., Pa.
SANDWICH MANUFACTURING CO., SANDWICH, ILLINOIS

Please Mention Pennsylvania Farmer When Writing to Advertisers

HORTICULTURE

The Problem of Plant Lice

Garden plants of nearly all kinds, and especially cucumbers, melons, and cabbages, tomatoes, radishes and peas, frequently suffer severe injury from the attacks of small, soft-bodied greenish insects known as plant lice or aphids. This group of insects which feed by sucking the juices of the plants, works on the under side of the leaves. As the sap is extracted the leaves become curled and dry up, frequently causing the death of the entire plant.

With favorable conditions, plant lice increase with great rapidity. If they appeared only in small numbers they would not be serious, but when millions of them are at work covering the entire lower surfaces of the leaves, the plants are soon killed. In the early spring the plant lice suck the juices of various weeds and other plants, but with the growth of melons, cucumbers, cabbage and other garden plants, the winged forms make their way to these plants, suck the under surfaces of the leaves, and here they begin to suck the sap and bear living young.

FREED OF THE GIPSY MOTH

The gypsy moth, which a year ago threatened to become a serious menace in Pennsylvania, is now believed to be under control. Experts of the Pennsylvania Department of Agriculture, who have been engaged in fighting the pest, have completed an inspection which has indicated a very satisfactory condition.

Some months ago the gypsy moth was found on an estate in Cambria County. Traces of the moth were also found in the southeastern part of the state. Experts from the Bureau of Plant Industry of the Pennsylvania Department of Agriculture examined practically every shrub, vine and tree within a two-mile radius of the center of infection in Cambria County, and not a trace of the moth could be found. The same condition was found in the southern part of the state.

The corrective measures applied last fall are believed to have freed the state of this pest, but the inspections will be continued from time to time during the summer.



A York County Farmer and Farmerette—Isabelle and Eugene Beshore

JERSEY UNION GROWERS TO CO-OPERATE

Stimulated to action by the disastrous break in the onion market last summer, which resulted in a severe loss to the growers, the farmers of Cumberland County who grow large quantities of onions met at Cedarville on May 17 and organized an association for selling their crop co-operatively.

The association will have a board of 15 directors. An organization committee was appointed with Howard Steward of Cedarville chairman, to perfect the organization and enroll members.

It is expected that about 150 growers will join in this co-operative enterprise, and market the yield of 1200 acres thru the association.

SHORTAGE OF FRUITS, PREDICTED

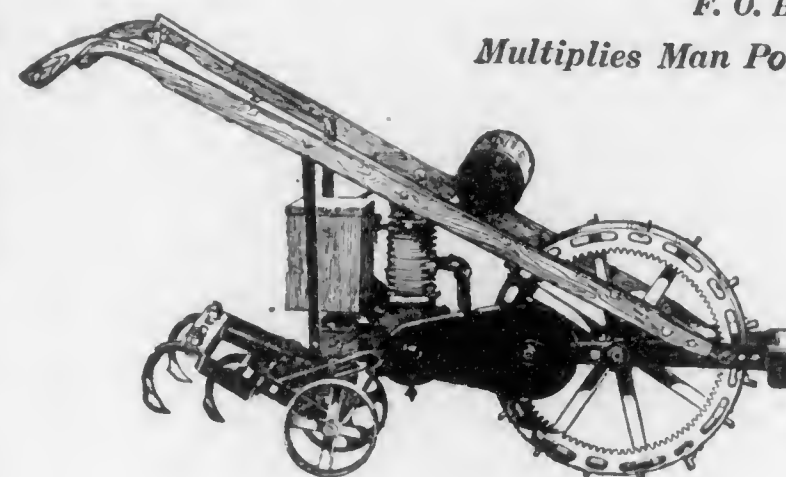
The state agents of the Bureau of Crop Estimates, U. S. Dept. of Agriculture, report that there will be a short fruit crop this year. The shortage will be fairly general east of the Rocky Mountains, except in portions of Michigan, New York and New England. The reports refer particularly to stone fruits, such as cherries, plums and peaches, but also indicate that there will be a material shortage of apples and grapes, though not as extensive as the shortage of stone fruits. It is too early, say the statisticians, to make an estimate of the probable yield of blackberries and raspberries. With the shortage of stone fruits it is expected that the fruit supply for domestic canning will be limited.

SPRYWHEEL

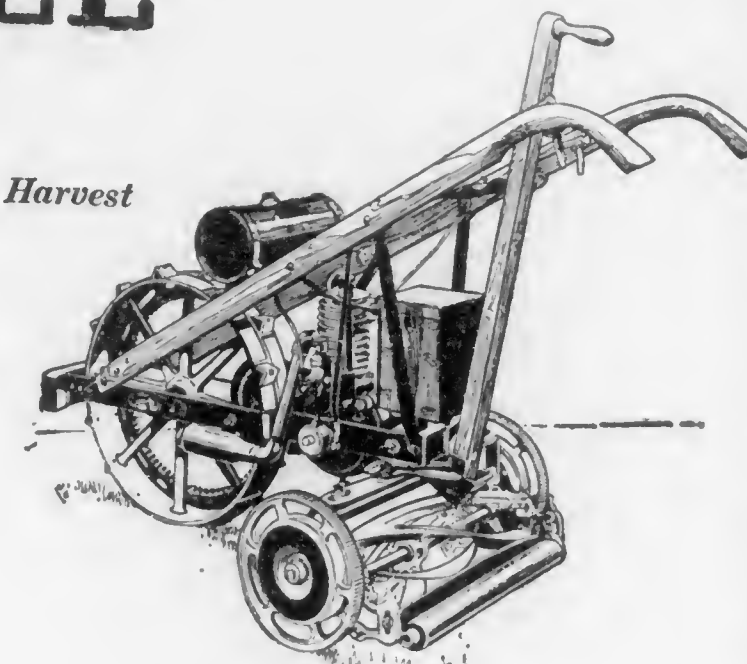
The \$150 Tractor

F. O. B. Boston, Mass., Crating Extra

Multiplies Man Power by Five from Seedtime to Harvest



One Gallon
One Day's Fuel



Don't Overlook Sprywheel

It practically eliminates the biggest item of cost in truck farming—hand hoeing

YOU can't tell what prices your crops will bring. But you can figure the cost of those same crops in fertilizer, seed, capital and labor invested. And labor—hand labor—is the great big item that is so often partly overlooked in fixing costs. Almost the only way to lower your crop cost is to reduce the labor cost or in some way increase the yield per plant and per acre.

Sprywheel makes both of these things possible.

How Sprywheel increases the yield per acre

Sprywheel makes both practical and economical the continuous and late-season cultivation which agricultural colleges and farm experiment stations have definitely proved yields crop increases far in excess of the cost of the additional labor—even when hand hoes and wheel hoes are used. Using Sprywheel this cost is reduced to a fifth of the cost of doing the work by hand.

Sprywheel also permits planting rows so close together that plants have just enough room to attain full maturity—an important advantage on high-priced, heavily fertilized land.

Besides, Sprywheel insures uniform and timely cultivation—turns and mixes the soil more evenly and thoroughly than is possible by hand or wheel hoes, keeps the top soil loose, conserves moisture and keeps down weeds. Cultivates rows right up to maturity, long after the height and spread of the plants makes multiple row cultivation impractical.

For these reasons Sprywheel cultivation means extra bushels per acre—added profits.

How Sprywheel cuts crop costs and increases profits per bushel

Sprywheel substitutes machine power for muscle power. It enables one man to do more and better cultivation than five men with hand or wheel hoes.

In five minutes a power lawn mower

By loosening two bolts, the cultivator tool assembly is dropped. Substitute the Sprywheel Lawn Mower Attachment. Fasten in place with the same two bolts, and you have a power lawn mower—remarkably sturdy, simple, efficient, and easily guided. Especially suited to country estates, country clubs, parks and cemeteries.

Sprywheel's improved fuel economizer

One of the many engineering improvements which Sprywheel embodies is the Sprywheel Slow Speed Plug. It applies a new principle of carburetion—gives greater power at slower speed with a real saving in gasoline consumption. With the slow speed plug you get maximum horse power at 1 1/2 to 2 1/2 miles per hour. Remove the plug and you get the same horse power at 2 1/2 to 4 miles an hour—two speeds and no gears. It's a great invention.

Leading implement dealers demonstrate and sell Sprywheel

Authorized Sprywheel dealers are experienced and responsible. Write us for full and detailed description of what Sprywheel is and what it will do. If you so desire, we will arrange to have the nearest Sprywheel dealer demonstrate Sprywheel for you. All Sprywheel dealers maintain a stock of parts, tools and attachments—are equipped to render prompt service to every Sprywheel owner in their territories. Write today for a Sprywheel catalog and the name of the nearest Sprywheel dealer.

There is still a little open territory. It will stay open till we find live dealers. If you are the man we should tie up with, write or wire.

A labor saver for market gardeners, nurserymen and home gardeners

Sprywheel has power and traction enough to pull sets of weeding rakes, cultivating teeth, hoes, right and left hilling shovels or a small plow for running seeding furrows. It practically eliminates hand-hoeing.

Hundreds of half-acre home gardeners, horticulturists, nurserymen and market gardeners have found Sprywheel the greatest labor-saving and money-making investment they ever made. You should own one or more. Uses the same tools as your wheel hoe.

SPRYWHEEL DIVISION

H. C. Dodge, Inc. Dept. No. K
 280 Madison Avenue, New York City



Of Interest to Farm Women and Girls

Miss Cynthia's Novelty Dish

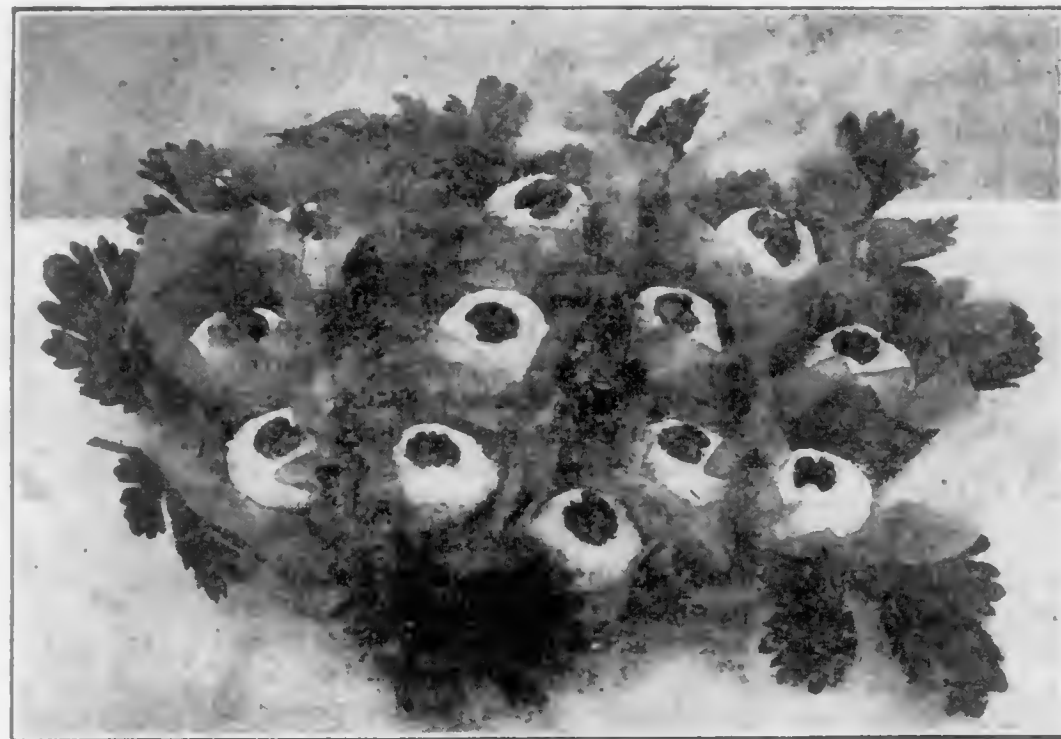
"WHY, yes, Mrs. Berkley, I'll do my bit. When do you say it is? Thursday? Very well. Yes, good-bye."

Miss Cynthia, as she hung up the receiver, felt suddenly and strangely limp. You see, she had always prided herself on her culinary products, but this fairly took her breath and she racked her brain—and pantry as well—for something particularly choice, attractive and toothsome also. For, by a strange coincidence, two golden weddings were to be celebrated, only three days off, by all the village and farm folks, and the committee suddenly decided that they needed some more food, and wanted something novel. Very early she arose on Wednesday morning and baked and roasted, but

which she washed carefully. Dearly she slipped a leaf under each tissue-encased ball, as illustrated, which gave each platterful exactly the right color finish.

Packing the precious platters of cheese balls each in a separate paste-board suit box (she always saved these boxes), she tied them stoutly atop of each other so that she could carry the platterfuls with no danger of mishap. She got in with John's folks when they came along and stopped for her.

At the town hall the long tables were already rapidly being filled with choicest viands when Cynthia and John's folks arrived. After impressive, fitting services and greetings from the "bridal parties" who stood with their attendants in recep-



A Pleasing Way to Serve Cottage Cheese

when they were all prepared, somehow they looked "common," and she wanted something different from others.

At noon, still troubled, she started out with the sour milk for the poultry. Half way back to the house an idea came to her that made her all animation and ambition. She had thought of the dish that might distinguish itself. She fairly flew to the cellar, gathered up the pans that contained the freshest "clabber" and hastened to place it all on the back of the range, where it stayed until of proper consistency, and she could remove the soft, shining curd from the liquid.

Tying this in a clean linen bag, she hung it up to drain thoroly. Then she got the platters all ready, and cut small squares of waxed paper. Then she cracked some hickory-nuts, being careful to keep the kernels whole. When the curd was ready she emptied it into a bowl of sufficient size, salted it to suit taste and added quite a lot of rich sweet cream, mixing it in thoroly. Then she shaped the cheese into good-sized round balls, and carefully placed each one in a square of waxed paper, as illustrated herewith. When all were so prepared, she gave each just a dash of black pepper and pressed in a choice nut meat on top. Carefully she put them away in a cool place till morning.

Next morning she was up early again and out in the garden clipping choicest, tender celery leaves,

which she washed carefully. Dearly she slipped a leaf under each tissue-encased ball, as illustrated, which gave each platterful exactly the right color finish.

How to Pack

The asparagus is packed at once into clean hot jars, the jars are filled with boiling water, a teaspoon of salt is added to each pint, and the rubbers and covers are adjusted and partially sealed.

Because asparagus is more liable to spoil than many other vegetables, the use of the pressure canner is recommended. Cooking for 40 minutes under 10 lbs. of steam pressure has been found the most satisfactory method.

The "acid method" has been suggested if a pressure canner is not available. It consists of using 1 tablespoon of vinegar or lemon juice per each pint of asparagus and boiling for 1½ hours in water.

With either method, the jars should be removed promptly from the canner or bath and sealed.

Save Stalks For Soup

The tough ends of the stalks should be canned for soup. The pieces should be cooked in as little water as possible until they are soft enough to press thru a sieve. The pulp is then put into clean hot jars and 1 teaspoon of salt is added to each pint. Grated onion or celery may be added if desired. After the rubbers and covers have been adjusted and partially sealed, the jars should be processed for 40 minutes under 10 lbs. steam pressure, or 1 tablespoon of vinegar may be added to the jars per each pint, and then cans boiled in a hot-water bath for 3 hours.

The jars should be removed from the canner or bath at the proper time and sealed at once.

This puree may be used as the foundation for cream of asparagus soup or added to any kind of meat stock.—N. Y. Agricultural College.

FRUIT CAKE WITHOUT SPICE

In housecleaning and gardening time, we women like to bake up food that can be kept in good condition several days to be ready for use on short notice. Fruit cake is an old standby for this purpose. To make variety make up some of the following recipe. A good many do not care for such heavily spiced cakes as fruit cakes usually are, and they will be glad of this way to make a good

fruit cake without spicing it. The fruit used is dried apricots. Look over and wash some apricots, and put them thru the food chopper. Use enough so that you will have 1 cupful of the pulp after they are thus chopped.

Beat 1 egg in a mixing dish, add 1 cup sugar and ½ cup shortening (butter or lard or vegetable oil fat), and beat until creamy. Sift together 2 cups flour, 3 level teaspoons bak-

ing powder, and ¼ teaspoon salt. Gradually stir into the sugared shortening this flour and ½ cup milk. When well mixed, add the chopped apricots, and bake as a loaf cake. This cake keeps well, and the apricots give it a nice flavor.—Viola M. Lee, Broome Co., N. Y.

HOME-MADE HOOKED RUGS

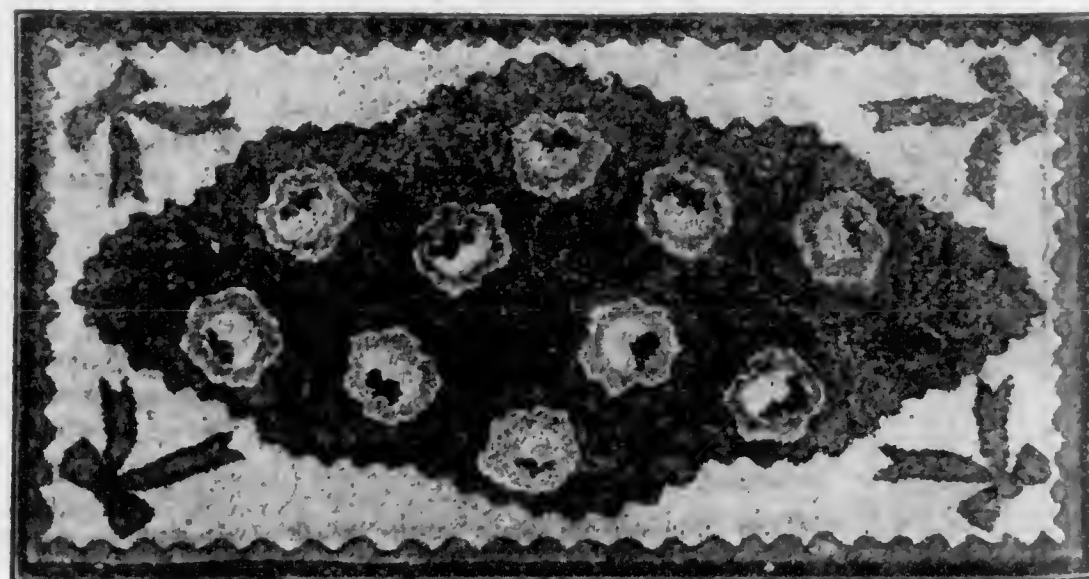
Hooked rug making is fascinating home work. You can use old worn woolen goods that still retain their color, such as red blankets, dress goods and men's suits, if not too thick. And to get other colors you can easily dye them with the handy dyes now on the market.

The rugs must be cut much finer than carpet rugs, and cut according to the thickness of the goods. For the foundation of the rug I find common burlap such as is wrapped around furniture better than fertilizer sacks because it is not so tightly woven. Cut the burlap the size you wish the rug to be, hem it neatly with cord or coarse thread, making a flat hem ½-inch deep. Sew the burlap into a frame as you would for quilting a quilt. You could use quilting frames, but small frames are easily made and are more convenient.

Now you are ready to start on your design. Make the design according to the rugs you have. If you have bright colors, roses and leaves are possible and pretty. The illustration shows one of my prettiest rugs. The center background is made of an old red woolen blanket. The roses are outlined with raveled burlap by putting five or six strands together and drawing it thru the burlap the same as the rags. Burlap strands are fine for outlining; they wear well and look fine. The roses are made of a different shade of red from the red in the center. The leaves, which do not show up in the photo, are outlined with black and made of two shades of green, one-half of each leaf of each shade.

The scallop border is outlined with one row of black, followed with one row of raveled burlap. The outer edge of the scalloped center is bordered the same way.

The space between the border and center is made of light gray. Bow knots of the center color fill the corners prettily.



Mrs. Moore's Hooked Rug

The center background and the edge are dark red, the roses are a different shade of red, and the light part is gray.

fruit cake without spicing it.

The fruit used is dried apricots. Look over and wash some apricots, and put them thru the food chopper. Use enough so that you will have 1 cupful of the pulp after they are thus chopped.

Beat 1 egg in a mixing dish, add 1 cup sugar and ½ cup shortening (butter or lard or vegetable oil fat), and beat until creamy. Sift together 2 cups flour, 3 level teaspoons bak-

For the weaving use a heavy steel crochet or rug hook. Do not sew the rags. To those who have never made a rug of this kind I suggest that they hem a piece of burlap 1½ yards long and ¾ yard wide, and mark a border 5 inches wide all around, then make the center hit and miss, and the border of one kind of goods.

Hold a strand in your left hand on the under side of the burlap, and



Give figures and letters of each pattern exactly as printed at beginning of each description or we will not be responsible for correct filling of orders. Give bust measure when ordering for waist patterns, waist measure for skirt, and age for children's patterns. Address Pennsylvania Farmer, 261 S. Third Street, Philadelphia, Pa.



3590.—Set of Pretty Caps.—The pattern is cut in 3 sizes: 18, 20 and 22 inches. To make the caps for either head size indicated will require ½ yard for No. 1 and for No. 2, ¾ yard for the lining and ¼ yard for the outer portions. Embroidered silk, linen or lawn would be pretty for No. 1; No. 2 could be of silk, voile, batiste, lawn, net or crepe de chine. Pattern, 10 cents.

3613.—Frock for Play or School.—The pattern is cut in 4 sizes: 4, 6, 8 and 10 years. A 6-year size requires 1½ yard of 36-inch material. Cotton, poplin, gingham, kindergarten cloth, percale, lawn and crash are attractive for this model. Stitching, embroidery or braid forms a suitable decoration. Pattern, 10 cents.



3562.—Popular Style for Growing Girl.—It is cut in 3 sizes: 12, 14 and 16 years. A 14-year size will require 3½ yards of 44-inch material. Crepe de chine with frills of taffeta or organdy would be attractive for this model or, pongee, voile, linen, batiste, also gingham, challie and satin. Pattern, 10 cents.

PATTERN CATALOG NOTICE

Send 15c for our up-to-date Spring and Summer 1921 Catalog, containing over 500 designs of ladies', misses and children's patterns, a concise and comprehensive article on Dressmaking, also some hints for the needle (illustrating 20 of the various, simple stitches), all valuable to the home dressmaker.

Fruits, fresh air and exercise are better than pills and potions.

If the back yard is kept neat, it is usually the women folks who must do it. A row or two of flowers, a shrub or so, will help make the neatness seem more worth-while.

We Would Like to Send You This Book About Better Heating

THIS new book will surely interest you, if you are planning the erection of a new home—or if you have a residence, store or other building that is improperly heated. "THE STORY OF HOMAKER" sets forth in plain, simple language the advantages of the pipeless furnace method of heating. It also explains exactly why HOMAKER is the better pipeless furnace.

HOMAKER is the product of ripe experience, backed by the most modern of manufacturing resources. It is built by The Williamson Heater Company, which, for nearly a third of a century, has ranked among the foremost heating and ventilating engineers of this country.

HOMAKER PIPELESS FURNACE

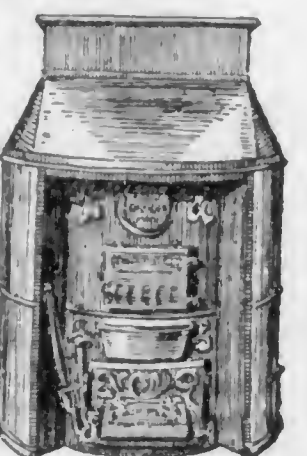
This better pipeless furnace is pre-eminently the heating plant for economy, comfort and health. HOMAKER furnishes an abundance of warm, balmy air that is absolutely clean—dust-free. It ends the dust and dirt evil for all time. When you shake or dump HOMAKER, all its doors are closed tight. No dust can escape.

HOMAKER is the oversize furnace. Its generous dimensions of casing and register, the centering of all heat-radiating castings and the elimination of all abrupt angles, are wonderful fuel savers. Combined, they assure free, easy circulation of the heated air—plenty of warmth on the coldest days without forcing the fire.

HOMAKER has a quadruple casing, the inner section being of laminated construction (2 sheets of steel between which is placed a heavy layer of air-cell asbestos). This improved insulation conserves practically all the heat. Instead of heating the cellar, the warm air travels directly up through the register and into every room in the home.

Ample Warmth Guaranteed

The Williamson Heater Company guarantees that HOMAKER will heat your home to your entire satisfaction. If it fails, your money will be refunded, your furnace taken out and every trace of its installation removed. Find out why you have the right to expect more—in comfort, health and economy—from this better pipeless furnace. Write today for our free book "The Story of HOMAKER."



The Williamson Heater Co.
338-G West Fifth St., Cincinnati, Ohio

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THE WILLIAMSON HEATER CO., 338-G West Fifth St., Cincinnati, Ohio
You may send me without obligation, your free book, "The Story of HOMAKER."

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Send No Money

Old Time Shoe Bargain
Prices on shoes are way down. This \$1.98 price knocks the bottom out of high prices. Think of it, \$1.98 for this comfortable shoe. Worth \$4.00. It's a long-up real honest, good bargain.

Special Scout Shoe

\$1.98

This is a special bargain this good solid all leather summer scout shoe. A light, cool, comfortable work shoe and as far from high prices as you ever saw. Solid leather soles and uppers. Broad toe. Men, everywhere wear this cool, inexpensive, desirable summer shoe. We will send these shoes to you. Send no money with order, just your name, address and size wanted. Pay \$1.98 and postage when shoes arrive. If not satisfied with shoes return them and we will refund your money and postage. Don't delay. Order today. Boy's Size, \$1.55.

Send No Money

NORWICH BARGAIN SHOE HOUSE
DEPT. 11 NORWICH, N. Y.

COMBINATION OFFER

5 lbs. COFFEE \$2.00
3 lbs. TEA

Buy direct from wholesaler and save 10c a lb. Sent Parcel Post Prepaid on Receipt of Your Check, Money Order or Cash. Satisfaction Guaranteed or Money Back. Gillies Coffee Co., 233-239 Washington St. Established 81 Years. New York City

10 Days Free Trial

Let me send you my Special Low Price and 10 Days' Trial Offer on the famous OTTAWA Pressure Cooker. GOOD FOR CANNING. Complete set of Aluminum Utensils comes with it. Cooks wholemeal at once. Saves in time, work and fuel. Write today. R. C. OTTAWA, 661 West Ottawa Mfg. Co., 327 Cook Ave., Ottawa, Kan.

PLEASE say: "I saw your adv. in Pennsylvania Farmer."

The Height of the Potato Spraying is at hand. If you have not used

Hydroxide

Use it for your later sprayings.

Its high percentage of arsenic will kill the remaining potato bugs and its high percentage of copper will help keep the vines healthy and free from disease.

SPRAY WITH THE BEST

The spray with the highest analysis

We make a full line of Spraying chemicals—Lime Sulphur, Scale Oil, Lead Arsenate, Chemical Lime, Dusting Mixtures, Sulphur (all kinds).

If your dealer does not carry our line write us direct.

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CAMDEN, N. J.
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SIMPLEX

The Laundered Roll Front Collar—A Tropical Weight for summer wear

SLIDEWELL COLLARS

Save Your Tie, Time and Temper
Hall, Hartwell & Co., Makers, Troy, N. Y.

FARMS

\$900 Secures Farm; Income \$3200 8 Cows, Poultry, Tools

Cream separator, implements, equipment thrown in; watered by beautiful creek stocked with speckled trout; convenient dirt road; advantage: 60 acres productive loamy fields; 15-cow creek-watered pasture; woodland for 500 cords; orchard 100 bearing apple trees; peaches, plums, cherries, cress, etc.; 2-story, 6-room house; two large verandas; delightful maple shade; wonderful view; two 60-foot barns; 16-cow garage; poultry house; granary. To close estate \$900, only \$200 down, easy terms. A rare opportunity. First here with. O. H. EVANS, Williamsport, Pa.

\$700 Cash Secures 75-Acre Village Farm With

Pair horses, cow, calf, hogs, poultry, vehicles, machinery, tools, etc., included; convenient market milk taken at door; machine-worked fields cut 30 tons hay; 10-cow spring-watered pasture; wood; timber; fruit; solid 2-room lodge overlooking village; 40-foot basement barn; 2 poultry houses, etc. Owner called away suddenly, all \$700, only \$70 down, easy terms. See page 13 Illus. Spring Catalog 1920. Bazarus, FRID. STUBBS, PAID AGENT, 1422 W. Land Title Bldg., Phila., Pa.

Farm For Sale

Valley Farm of 100 acres. Beautiful location on macadam road (Susquehanna Trail), 1 mile to Conowingo, Pa. High school, churches, station, etc. Factors: 4 miles to Mansfield, Pa. State Normal School. Large house; large barn, silo, stock; crops, hay and grain; \$8000. Half down. Photo on request. No agents.
E. C. SNYDER, COVINGTON, PA.

FARMS

Poultry, truck, stock and grain farms cheap. FIGGS & NOCK, Salisbury, Maryland.

TELL the advertiser you saw adv. in Pennsylvania Farmer.

The Voice of the People

This department is reserved for use of our readers to discuss problems and matters of general farm interest. Write your views and comments briefly on any question of social, economic or educational importance and thus share them with others. Such articles should not exceed 200 or 300 words. Publication of such articles does not signify editorial endorsement or agreement.

THE COST OF ANTHRACITE COAL

We noticed an article in your May 21st issue of this year headed: "Fleeing the Public," which article deals with the sale price of anthracite coal and which we believe was written without getting first hand information on the subject.

The public do not seem to be generally aware of the fact that the anthracite miners had a vacation strike last year which was in effect the breaking of their agreement with the operators, and the Government intervened and after extensive hearings covering both sides the miners were granted a material increase in wages. This contract does not expire until next spring and the anthracite operators cannot break the contract at this time without laying themselves open to a charge of bad faith and we do not believe they are disposed to do anything except to keep their contracts, when honestly and fairly entered into. In as much as the wages are a very large proportion of the cost of mining and there is no prospect of a reduction, and in view of the fact that there has been no reduction in royalties, taxes, etc., except for possibly a few items of material that would enter into general repair about the breaker, this would indicate that a reduction in the price of anthracite coal at the present time would not be warranted and the present prices coincide very closely with the prices fixed by the Government allowing for increases due to increased pay, etc., that have intervened since Government control was removed.

There was a period of exceedingly light buying resulting in a partial suspension of mining during the latter part of February and March, and the months of April and May saw a comparatively light demand compared with the demand usually experienced in these months. This has had the effect of creating a shortage of coal above ground and in as much as anthracite coal has reached its peak in production and is gradually drifting into the luxury class it is exceedingly important that those who depend on it for their supply of fuel should arrange to make their purchases so that production will be continuous thruout the year and thus keep costs at a minimum and enable all parties to be satisfied as would be possible.

We are convinced that the policy of less government in business would be the policy to apply to the anthracite industry, and if anthracite prices are left to seek their own level in a normal competitive way we believe the public will be economically and satisfactorily served. We do not believe the same economy and satisfaction could be had from government ownership or control.

There is plenty of fuel available such as anthracite, briquettes, bituminous coal, canal-coal and coke, all of which fuels can be purchased at less money than the domestic sizes of anthracite coal and the supply of these other fuels in the aggregate seems almost unlimited so far as our present needs are concerned and it is generally conceded that each year a certain proportion of the public could effect satisfactory economies by using the cheaper fuels, recog-

nizing that anthracite coal is more expensive and partakes of the character of a luxury.

We trust that we have not burdened you with this detail but in as much as there is something to be said in defence of the anthracite situation we believe it should be said when charges such as appeared in your paper are being broadcasted and if nothing is said in defence it would appear as tho there was nothing that could be said, and such is not the case.

We have been shippers of anthracite coal, as well as other fuels, for over thirty years, and endeavor to keep in close touch with conditions pertaining to the fuel market, so that we are able to give our customers intelligent advice with regard to the quality of various fuels and make recommendations as to the best seasons of the year to buy both for economy in price and assurance of having adequate stocks of coal on hand when they are needed.

Our present advice to retail dealers, consumers and manufacturers, particularly as applied to anthracite coal, would be to put in their season's supply as promptly as possible if they have not already done so, as this policy will result in a saving in money and avoid much incurring delay due to inability of the mines to produce and ship coal fast enough to cover the needs of the public when the burning season has arrived.

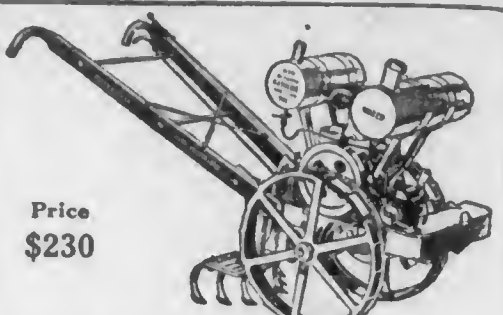
We expect that car shortage will also be in evidence during the fall and winter which will add to the difficulties of the situation.—W. H. Druckemiller, Northumb'nd Co., Pa.

ANNUAL WHITE SWEET CLOVER

It has been determined that sweet clover, which grows luxuriantly along roadsides and out-of-the-way places, and which is grown in some sections as a forage crop, has one strain which is annual. The annual sweet clover occasionally appears in patches of the more common biennial form, either as single specimens or in small groups. Seed of the annual has been separated and in recent years it has been propagated.

The nature of this new variety is such as to indicate that it may have important possibilities. Probably its greatest use for hay will be as an emergency crop. When a stand of clover has been winter killed, or for any reason a farmer finds that his hay supply will be short, this variety can be seeded during the spring and, provided lime and the proper bacteria are present, yield a good hay crop. Where rainfall is sufficient it may be seeded even after wheat harvest. It makes a good growth the first season, and experiments in Iowa and Michigan have shown that it may be seeded with oats to be harvested after the grain is cut. It grows rapidly, and for this reason will keep ahead of weeds.

The annual has a smaller and more woody root than the biennial form, and crown or resting buds are not formed. The stems, branches, leaves, flowers, pods, and seeds are indistinguishable from those of the biennial form, but during the season of seeding the plant grows more rapidly, blossoms, fruits, and dies. It blooms early and ripens seed in August when seeded early.



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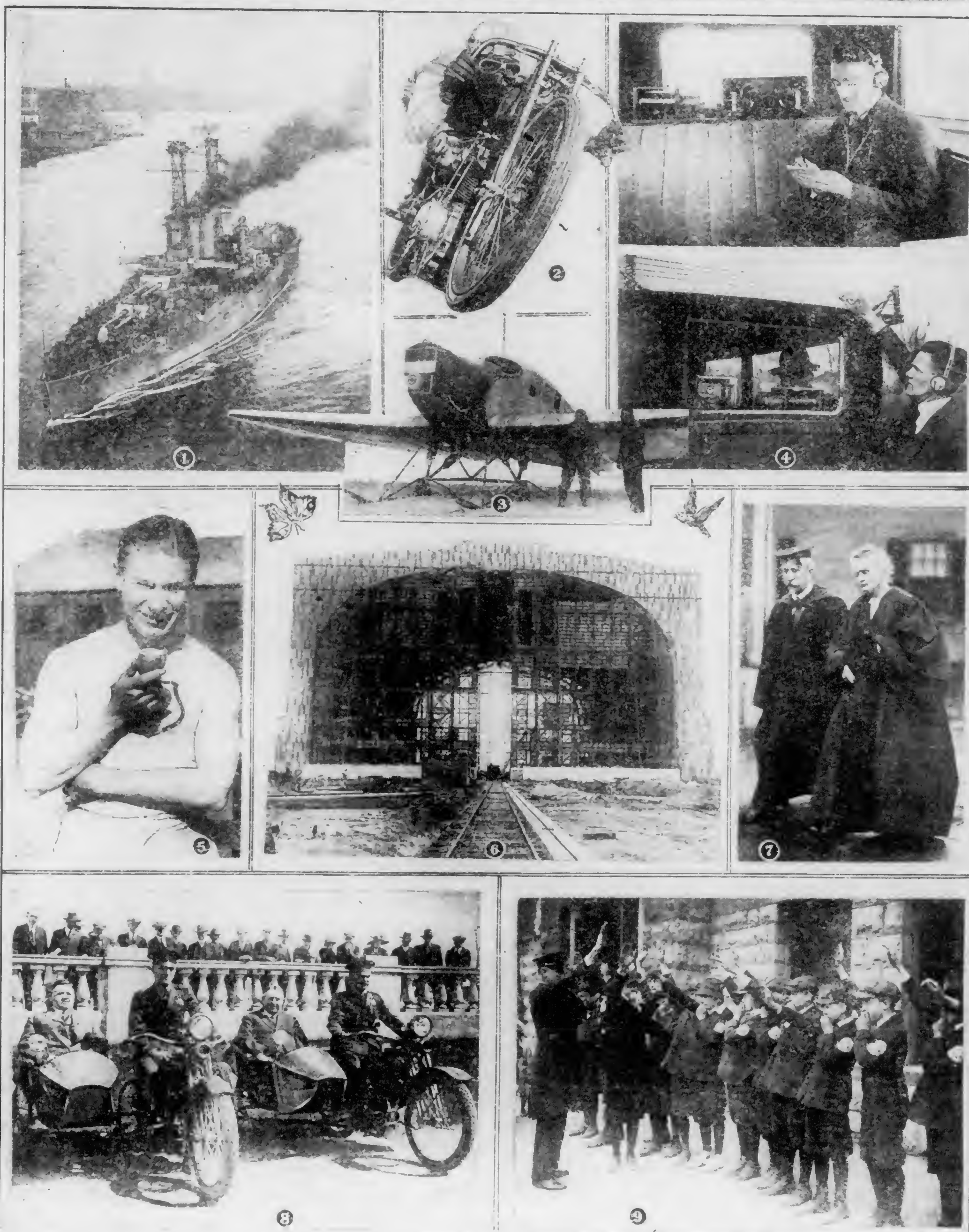
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PASSING EVENTS IN PICTURES



- 1—The U. S. S. Utah steaming out of Brooklyn Navy Yard. She is one of the many dreadnaughts to be sent to the Far East.
- 2—Motorcycle going at rate of 112 miles per hour. Photograph taken with an exposure of one thousandth of a second—even "stopped" the spokes.
- 3—Oil prospectors travel in the "Imperial Oil Plane" to northern Canada oil fields. Note

- the runners which replace wheels on the plane for snow.
- 4—A radiophone equipment costing about \$50, set up in a doctor's automobile, will enable the doctor to be reached within a radius of five miles.
- 5—Paddock, world's greatest sprinter, attributes his success to his habit of sucking lemons.

- 6—New Navy hangar at Lakehurst, N. J.
- 7—Mme. Curie, discoverer of radium, and Dr. Wm. Allen Nelson, president of Smith College.
- 8—Colorado's new State Rangers use motorcycles instead of bronchos.
- 9—Chicago boys learning to aid traffic cops at street crossings near the schools, where so many children were injured last year.

(Photo. Copyright by Underwood & Underwood.)

The Valley of the Giants

By PETER B. KYNE

Synopsis—John Cardigan, a middle-aged man—a giant in frame and mind—was a settler along the Pacific coast in Humboldt County, California, in 1850. His business was cutting the plant trees into lumber. His young wife died and was buried among the redwoods in "The Valley of the Giants," as he called the spot which he loved and preserved as a shrine to her memory. Bryce, Cardigan's only son, was an intimate chum of his father—who planned that he should inherit the great lumber business which he had built up. Bryce had a brief love affair with Shirley Sumner, a visitor to the neighborhood, but she was soon forgotten. Cardigan tried to buy a tract of timber adjoining his and refused to be lured into raising his offer for it. He determined to move his mill to the San Hedrin watershed and start logging operations there. Bryce, after four years of service in the East, and two years of travel, abroad returned to Sequoia. He was met at the train by George Sea Otter. Bryce declared an interest in a young woman who sat off the train with him and found no one to meet her. He learned that she was Shirley Sumner and she accepted his invitation to ride to Sequoia with him.

Chapter VI

THEY were on the road again by eight o'clock next morning, and just as Cardigan's mill was blowing the six o'clock whistle, Bryce stopped the car at the head of the street leading down to the water-front. "I'll let you drive now, George," he informed the silent Sea Otter. He turned to Shirley Sumner. "I'm going to leave you now," he said. "Thank you for riding over from Red Bluff with me. My father never leaves the office until the whistle blows, and so I'm going to hurry down to that little building you see at the end of the street and surprise him."

He stepped out on the running-board, stood there a moment, and extended his hand. Shirley had commenced a due and formal expression of her gratitude for having been delivered safely in Sequoia, when George Sea Otter spoke:

"Here comes John Cardigan," he said.

"Drive Miss Sumner around to Colonel Pennington's house," Bryce ordered, and even while he held Shirley's hand, he turned to catch the first glimpse of his father. Shirley followed his glance and saw a tall, powerfully built old man coming down the street with his hands thrust a little in front of him, as if for protection from some invisible assailant.

"Oh, my poor old father!" she heard Bryce Cardigan murmur. "My dear old pal! And I've let him grope in the dark for two years!"

He released her hand and leaped from the car. "Dad!" he called. "It is I—Bryce. I've come home to you at last."

The slightly bent figure of John Cardigan straightened with a jerk; he held out his arms, trembling with eagerness, and as the car continued on the Pennington house Shirley looked back and saw Bryce folded in his father's embrace. She did not, however, hear the heart-cry with which the beaten old man welcomed his boy.

"Sonny, sonny—Oh, I'm so glad you're back. I've missed you, Bryce, I'm whipped—I've lost your heritage. Oh, son! I'm old—I can't fight any more. I'm blind—I can't see my enemies. I've lost your redwood trees—even your mother's Valley of the Giants."

And he commenced to weep for the third time in fifty years. And when the aged and helpless weep, nothing is more terrible. Bryce Cardigan said no word, but held his father close to his great heart and laid his cheek gently against the old man's, tenderly as a woman might. And presently, from that silent communion of spirit, each drew strength and comfort. As the shadows fell in

John Cardigan's town, they went home to the house on the hill.

Chapter VII

Shirley Sumner's eyes were still moist when George Sea Otter, in obedience to the instructions of his youthful master, set her, the French maid, and their hand-baggage down on the sidewalk in front of Colonel Seth Pennington's house. The half-breed hesitated a moment, undecided whether he would carry the hand-baggage up to the door or leave that task for a Pennington retainer; then he noted the tear-stains on the cheeks of his fair passenger. Instantly he took up the hand-baggage, kicked open the iron gate, and preceded Shirley up the cement walk to the door.

"Just wait a moment, if you please, George," Shirley said as he set the baggage down and started back for the car. He turned and beheld her extracting a five-dollar bill from her purse. "For you, George," she continued. "Thank you so much."

In all his life George Sea Otter



Waiting For Her Mail

had never had such an experience—he, happily, having been raised in a country where, with the exception of waiters, only a pronounced vagrant expects or accepts a gratuity from a woman. He took the bill and fingered it curiously; then his white blood asserted itself and he handed the bill back to Shirley.

"Thank you," he said respectfully. "If you are a man—all right. But from a lady—no. I am like my boss. I work for you for nothing."

Shirley did not understand his refusal, but her instinctive tact warned her not to insist. She returned the bill to her purse, thanked him again, and turned quickly to hide the slight flush of annoyance. George Sea Otter noted it.

"Lady," he said with great dignity, "at first I did not want to walk on this land." And with a sweeping gesture he indicated the Pennington grounds. "Then you cry a little because my boss is feeling bad about his old man. So I like you better. The old man—well, he has been like father to me and my mother—and we are Indians. My brothers, too—they work for him. So if you like my boss and his old man, George Sea Otter would go to

Manayunk for you pretty darn quick. You bet you my life!"

"You're a very good boy, George," she replied, with difficulty repressing a smile at his blunt but earnest avowal. "I am glad the Cardigans have such an honest, loyal servant."

George Sea Otter's dark face lighted with a quick smile. "Now you pay me," he replied and returned to the car.

The door opened, and a Swedish maid stood in the entrance regarding her stolidly. "I'm Miss Sumner," Shirley informed her. "This is my maid Marcelle. Help her in with the hand-baggage." She stepped into the hall and called: "Ooh-hoo! Nunky-dunk!"

"Ship ahoy!" An answering call came to her from the dining room, across the entrance-hall, and an instant later Colonel Seth Pennington stood in the doorway. "Bless my whiskers! Is that you, my dear?" he cried, and advanced to greet her. "Why, how did you get here, Shirley? I thought you'd missed the stage."

She presented her cheek for his kiss. "So I did, Uncle, but a nice red-haired young man named Bryce Cardigan found me in distress at Red Bluff, picked me up in his car, and brought me here." She sniffed adorably. "I'm so hungry," she declared, "and here I am, just in time for dinner. Is my name in the pot?"

Chapter VIII

Along the well-remembered streets of Sequoia Bryce Cardigan and his father walked arm in arm, their progress continuously interrupted by well-meaning but impulsive Sequoians who insisted upon halting the pair to shake hands with Bryce and bid him welcome home. In the presence of those third parties the old man quickly conquered the agitation he had felt at this long-deferred meeting with his son, and when presently they left the business section of the town and turned into a less-frequented street, his emotion assumed the character of a quiet joy, evidenced in a more erect bearing and a firmer tread, as if he strove, despite his seventy-six years, not to appear incongruous as he walked beside his splendid son.

"I wish I could see you more clearly," he said presently. His voice as well as his words expressed profound regret, but there was no hint of despair or heartbreak now.

Bryce, who up to this moment had refrained from discussing his father's misfortunes, drew the old man a little closer to his side.

"What's wrong with your eyes, pal?" he queried. He did not often address his parent, after the fashion of most sons, as "Father," "Dad" or "Pop." They were closer to each other than that, and a rare sense of perfect comradeship found expression on Bryce's part, in such salutation as "pal," "partner" and, infrequently "old sport." When arguing with his father, protesting with him or affectionately scolding him, Bryce, with mock seriousness, sometimes called the old man John Cardigan.

"Cataracts, son," his father answered. "Merely the penalty of old age."

"But can't something be done about it?" demanded Bryce. "Can't they be cured somehow or other?"

"Certainly they can. But I shall have to wait until they are completely blind; then a specialist will perform an operation on my eyes, and in all probability my sight will be restored for a few years. However, I haven't given the matter a great deal of consideration. At my age one doesn't find very much difficulty in making the best of everything. And I am about ready to quit now. I'd like to, in fact; I'm tired."

"Oh, but you can't quit until you've seen your redwoods again,"

John Cardigan shook with an inward chuckle, for the loving abuse of his boy had formed a habit of heap- ing on him never failed to thrill him. Instinctively Bryce had realized that tonight obvious sympathy copiously expressed was not the medicine for his father's bruised spirit; hence he

elects to regard the latter's blind-

Bryce reminded him. "I suppose it's been a long time since you've visited the Valley of the Giants; your long exile from the wood-goblins has made you a trifle gloomy, I'm afraid."

John Cardigan nodded. "I haven't seen them in a year and a half, Bryce. Last time I was up, I slipped between the logs on the old skid-road and like to broke my old fool neck. But even that wasn't warning enough for me. I cracked right on into the timber and got lost."

"Lost? Poor old partner! And what did you do about it?"

"The sensible thing, my boy. I just sat down under a tree and waited for George Sea Otter to trail me and bring me home."

"And did he find you? Or did you have to spend the night in the woods?"

John Cardigan smiled humorously. "I did not. Along about sunset George found me. Seems he'd been following me all the time, and when I sat down he waited to make certain whether I was lost or just taking a rest where I could be quiet and think."

"I've been leaving to an Indian the fulfillment of my duty," Bryce murmured bitterly.

"No, no, son. You have never been deficient in that," the old man protested.

"Why didn't you have the old skid-road planked with refuse lumber so you wouldn't fall thru? And you might have had the woods-boss swamp a new trail into the timber and fence it on both sides, in order that you might feel your way along."

"Yes, quite true," admitted the old man. "But then, I don't spend money quite as freely as I used to, Bryce. I consider carefully now before I part with a dollar."

"Pal, it wasn't fair of you to make me stay away so long. If I had only known—if I had remotely suspected—"

"You'd have spoiled everything—of course. Don't scold me, son. You are all I have now, and I couldn't afford to send for you until you'd had your fling." His trembling old hand crept over and closed upon his boy's hand, so firm but free from signs of age until they were ready to settle down to business. And you have enjoyed your little run, haven't you?" he concluded wistfully.

"I have, Dad." Bryce's great hand closed over the back of his father's neck; he shook the old man with mock ferocity. "Stubborn old lumberjack!" he chided.

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ness as a mere temporary annoy- ance, something to be considered lightly, if at all; and it was typical of him now that the subject had been discussed briefly, to resolve never to refer to it again. He released his hold on the old man's neck and tapped the latter's gray head lightly, while with his tongue he made hollow-sounding noises against the roof of his mouth.

"Ha! I thought so," he declared. "After your fifty-odd years in the lumber business your head has be- come packed with sawdust—"

"Be serious and talk to me, Bryce."

"I thought to send you to bed without your supper. Talk to you? You bet I'll talk to you, John Cardigan; and I'll tell you things, too, you scandalous bunko-steerer. Tomorrow morning I'm going to put a pair of overalls on you, arm you with a tin can and a swab, and set you to greasing the skidways. Partner, you've deceived me."

"Oh, nonsense. If I had whimpered, that would only have spoiled everything."

"Nevertheless, you were forced to cable me to hurry home."

"I summoned you the instant I realized I was going to need you."

"No, you didn't, John Cardigan. You summoned me because, for the first time in your life, you were panicky and let yourself get out of hand."

His father nodded slowly. "And you aren't over it yet," Bryce continued, his voice no longer bantering but lowered affectionately. "What's the trouble, Dad? Trot out your old panic and let me inspect it. Trouble must be very real when it gets my father on the run."

"It is, Bryce, very real indeed. As I remarked before, I've lost your heritage for you." He sighed. "I waited till you were able to come home and settle down to business; now you're home, and there isn't any business to settle down to."

Bryce chuckled, for he was indeed far from being worried over business matters, his consideration now being entirely for his father's peace of mind. "All right," he retorted. "It was my pleasure, Bryce, to have to let the servants go and give me the continued, 'and you wouldn't up the old home. That part of it is deny me my choice of sport, would settled; and weak, anemic, tenderly you? Remember, lad, I never had nurtured little Bryce Cardigan must put his turkey on his back and go cation; the only real travel I have into the woods looking for a job as ever had was when I worked my way around Cape Horn as a foreman lumberjack. . . . Busted, eh? Did I or did I not hear the six o'clock hand, and all I saw then was water and hardships; all I've seen since is my little world here in Sequoia and in San Francisco."

"You've sacrificed enough—too much—for me, Dad."

"It pleased me to give you all the advantages I wanted and couldn't afford until I was too old and too busy to consider them. Besides, it was your mother's wish. We made plans for you before you were born, and I promised her—ah, well, why be a cry-baby? I knew I could manage until you were ready to settle down to business. And you have enjoyed your little run, haven't you?" he concluded wistfully.

"I have, Dad." Bryce's great hand closed over the back of his father's neck; he shook the old man with mock ferocity. "Stubborn old lumberjack!" he chided.

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ness as a mere temporary annoy- civil engineer, I tell you, and my ance, something to be considered studying the installation and con- struction of big plants abroad." He commenced to chuckle softly. "I've been discussed briefly, to resolve never to refer to it again. He released his hold on the old man's neck and would have to be rebuilt, so I wanted to know how to rebuild it. And I've known for years that some day I might have to build a logging railroad—"

"My dear boy! And you've got a comet."

"Partner, I have a string of let- ters after my name like the tail of a comet."

"You comfort me," the old man answered simply. "I have reproach- ed myself with the thought that I reared you with the sole thought of making a lumberman out of you— and when I saw your lumber busi- ness slipping thru my fingers—"

"You were sorry I didn't have a profession to fall back on, eh? Or were you fearful lest you had raised the usual rich man's son? If the latter, you did not compliment me, pal. I've never forgotten how hard you always strove to impress me with a sense of the exact weight of my responsibility as your successor."

"How big are you now?" his father queried suddenly.

"Well, sir," Bryce answered, for his father's pleasure putting aside his normal modesty. "I'm six feet two inches tall, and I weigh two hundred pounds in the pink of condition. I have a forty-eight-inch chest, with five and a half inches chest-expansion, and a reach as long as a gorilla's. My underpinning is good, too; I'm not one of these fellows with spidery legs and a barrel-chest. I can do a hundred yards in ten seconds; I'm no slouch of a swimmer; and at Princeton they say I made football history. And in spite of it all, I haven't an athletic heart."

"That is very encouraging, my

boy—very. Ever do any boxing?"

"Quite a little. I'm fairly up in the manly art of self-defence."

"That's good. And I suppose you did some wrestling at your college gymnasium, did you not?"

"Naturally. I went in for every- thing my big carcass could stand."

The old man wagged his head approvingly, and they had reached the gate of the Cardigan home before he spoke again. "There's a big buck woods-boss up in Pennington's camp," he remarked irrelevantly. "He's a French Canadian imported from northern Michigan by Colonel Pennington. I dare say he's the only man in this country who meas- ures up to you physically. He can fight with his fists and wrestle right cleverly, I'm told. His name is Jules Rondeau, and he's top dog among the lumberjacks. They say he's the strongest man in the county." He unlatched the gate. "Folks used to say that about me once," he continued wistfully. "Ah, if I could have my eyes to see you meet Jules Rondeau!"

The front portal of the quaint old Cardigan residence opened, and a silver-haired lady came out on the porch and hailed Bryce. She was Mrs. Tully, John Cardigan's old housekeeper, and almost a mother to Bryce. "Oh, here's my boy!" she cried, and a moment later found herself encircled by Bryce's arms and saluted with a hearty kiss.

(Continued Next Week.)

Every noble life leaves the fiber of it interwoven forever in the work of the world.—Ruskin.

Some Luck

First Burglar—Did you have any luck in that house?

Second Burglar—You bet! I found a packet of love letters and I'll copy them and send them to my girl. That'll win her for me.

A Story for Children

The Discontented Violets

TWO little violets grew by the roadside, along with several companions, but these two were hid- den by a mossy stone. When passersby stopped to admire the beauti- fully cool, deeply colored flowers, the two by the stone would bob their heads and stretch their necks in order that they might be seen. How- ever, no one ever seemed to notice them.

"It's a shame that we are hidden here," said the first violet. "I am sure we are much prettier than those in the sun, for our color is deeper."

"Oh, I wish the grass weren't so deep about me," complained the second violet. "Sometimes I feel all choked and can hardly get enough air."

"Silly," returned the first violet. "We get all the air we need, and the shelter, this stone and this grass give us, makes us much larger and a more beautiful purple."

"I don't care," snapped the second violet. "I want to be where people can see me. It certainly is dull when no one notices us. I wish someone would take me away from here. There is some one now picking those next to us. Oh, I do hope she sees me."

No sooner had the discontented violet said this, than some careless little fingers closed around its stem and broke it cruelly off.

"Oh-oh!" said the little violet to itself. "that hurts dreadfully, and I

feel very queer. But then, think of all I might see and hear. I'm glad to get away from here."

But the poor little dower did not get very far. It slipped from the hand that was carrying it and lay on the ground in the hot sun.

"Oh dear, oh dear, I thought I was lucky, what a careless child to drop me and leave me here in this hot sun."

Another child came along and seeing the violet cried:

"Mother, see this violet. Some one had dropped it. Shall I take it?"

"Never mind, dear. It's withering already. It wouldn't last until we reached home," said her mother.

"How hot that sun is," said the slowly withering violet to itself. "I wish I were in the shade again. Oh, my poor head is withering. I wish—I wish—"

But the little violet could say no more for it was so weak from the heat and afterward it died.

The other violet had heard the re- marks of the child and lady and knew the fate of its companion. Everytime, after that, when voices were heard, it would snuggle down among the grass.

"How nice it is here in the cool place," it sighed contentedly. "I hope nobody ever is heartless enough to take me and leave me in the sun. I'm very happy now, just as I am."

—L. M. K.

Markets

PHILADELPHIA PRODUCE

—Philadelphia, June 6, 1921.

New potatoes are lower under the heavy supplies. This morning there were about 40 cars of new potatoes for sale, offering a large lot from S. C. N. C. Norfolk and the Eastern Shore of Virginia sections. The Eastern Shore potatoes sold at highest prices, best brand of seed potatoes at \$4.25 per bushel, with some at \$4.50 per bushel. The unbranded Eastern Shore potatoes, the North Carolina and South Carolina potatoes, as well as the Norfolk potatoes, sold at \$3.50 per bushel, with some poorly graded down to \$3.00 per bushel. No. 2 from all sections sold from \$1.50 to \$2.25 per bushel, and No. 3 down to \$1.10 per bushel. With the new potatoes selling at the lower prices, old potatoes are only meeting a very limited demand at the low prices of 30¢ to 35¢ per bushel.

Vegetables—New Jersey asparagus is beginning to draw towards the market for the season, and while there is still some showing quality good enough to command 35¢ to 40¢ per bushel, most sales are made from 10¢ to 20¢ per bushel. The Pennsylvania asparagus is the best on the market, best of which is selling at 10¢ to 20¢ per bushel. With other grades of down mostly 2¢ to 3¢ per bushel, with culls down to 1¢ to 2¢ per bushel. There have been no nearby beans on the market, but they may be expected within the next few days. Norfolk beans sold at \$2.50 per bushel, with some from the green, while the white sold somewhat higher, some bringing around \$4.00 per bushel. Norfolk green beans sold at 10¢ to 15¢ per bushel, while the nearby Penna. and N. J. brought 10¢ to 15¢ per bushel. Most of the cabbage is coming from the present writing from Norfolk and the Eastern Shore of Virginia sections, the Norfolk selling this morning at \$1.00 to \$2.50 per bushel, and the Eastern Shore at \$2.00 to \$2.50 per bushel. Some cabbage from Baltimore sold at \$2.50 per bushel. The first of the nearby Penna. has also made its appearance and sold there this morning early at \$2.00 to \$2.50 per bushel, but the market weakened during the day, and now the general market is \$2.00 to \$2.50 per bushel. Norfolk carrots sold mostly around 2¢ to 3¢ per bushel, while the nearby green carrots are selling at 2¢ to 3¢ per bushel, the wide range of 2¢ to 3¢ per bushel, as to size, some being still quite small. Cuminers in moderate supply and sell from \$2.00 to \$2.50 per bushel for culls and 2¢ to 3¢ per bushel for choice. Eggplants advanced in price today and are now selling at \$1.50 to \$2.00 per bushel. New Jersey lettuce has sold at 70¢ to \$2.00 per bushel and Penna. lettuce at \$1.50 to \$2.00 per bushel. Mushrooms are scarce and sell from \$2.00 to \$2.50 per bushel. Onions are moving very slowly the southern selling from 1¢ to 2¢ per bushel, the northern from 1¢ to 2¢ per bushel. Green onions are making their appearance on the market some selling here today at 70¢ to 80¢ per bushel. Watermelons are scarce and sell at \$1.50 to \$2.00 per bushel. The market requirements at 60¢ to \$1.50 per bushel. The Eastern Shore peaches and Norfolk are more or less neglected and sell at 5¢ to 10¢ per bushel. Apples are scarce and higher at \$1.50 to \$2.00 per bushel. Radishes are selling at 10¢ to 15¢ per bushel. Hops are still on the market and selling at 4¢ to 5¢ per bushel. Nearby tomatoes are in ample supply for the demand at 10¢ to 15¢ per bushel. Spring onions advanced today and are now selling at 15¢ to 20¢ per bushel. Eggplants are scarce and sell at \$1.50 to \$2.00 per bushel. Cabbage was very scarce here today and sold at \$1.50 to \$2.00 per bushel. There was a better demand for nearby sweet potatoes at \$1.50 to \$2.00 per bushel. For No. 1 and 2 and 3¢ per bushel. Watermelons are moving slowly at 15¢ to 20¢ per bushel.

Fruits—Strawberries are in higher supply and prices are quite a little higher than the price which prevailed last week. The best cars of Delaware strawberries sold here this morning at 15¢ to 20¢ per quart. The best New Jersey strawberries sold at 10¢ to 15¢ per quart. Some of the best berries from the Eastern Shore of Virginia are also on the market and are selling at 10¢ to 15¢ per quart. The market requirements at 10¢ to 15¢ per quart. The Eastern Shore peaches and Norfolk are more or less neglected and sell at 5¢ to 10¢ per bushel. Apples are scarce and higher at \$1.50 to \$2.00 per bushel. Radishes are selling at 10¢ to 15¢ per bushel. Hops are still on the market and selling at 4¢ to 5¢ per bushel. Nearby tomatoes are in ample supply for the demand at 10¢ to 15¢ per bushel. Spring onions advanced today and are now selling at 15¢ to 20¢ per bushel. Eggplants are scarce and sell at \$1.50 to \$2.00 per bushel. Cabbage was very scarce here today and sold at \$1.50 to \$2.00 per bushel. There was a better demand for nearby sweet potatoes at \$1.50 to \$2.00 per bushel. For No. 1 and 2 and 3¢ per bushel. Watermelons are moving slowly at 15¢ to 20¢ per bushel.

Butter—Prints, 36¢ to 40¢ per pound; tubs, 35¢ to 40¢ per pound; cooking, 25¢ to 30¢ per pound; Ohio, 25¢ to 30¢ per pound.

Cheese—New York, old full cream, 20¢ to 25¢ per pound; Swiss, 20¢ to 25¢ per pound; Longhorn, 20¢ to 25¢ per pound; Limburger, 10¢ to 15¢ per pound; do 2-lb. 25¢.

Eggs—Fresh select, 28¢ to 29¢; current receipts, 26¢ to 27¢.

BALTIMORE PRODUCE

—June 4, 1921.

Butter—Creamery, Western separator, extras, 31¢ to 32¢; firsts, 30¢ to 31¢; do prints, 28¢ to 29¢; do tubs, 25¢ to 26¢; do 2-lb. 25¢; do 1-lb. 25¢; do 1/2-lb. 25¢; do 1/4-lb. 25¢; do 1/8-lb. 25¢; do 1/16-lb. 25¢; do 1/32-lb. 25¢; do 1/64-lb. 25¢; do 1/128-lb. 25¢; do 1/256-lb. 25¢; do 1/512-lb. 25¢; do 1/1024-lb. 25¢; do 1/2048-lb. 25¢; do 1/4096-lb. 25¢; do 1/8192-lb. 25¢; do 1/16384-lb. 25¢; do 1/32768-lb. 25¢; do 1/65536-lb. 25¢; do 1/131072-lb. 25¢; do 1/262144-lb. 25¢; do 1/524288-lb. 25¢; do 1/1048576-lb. 25¢; do 1/2097152-lb. 25¢; do 1/4194304-lb. 25¢; do 1/8388608-lb. 25¢; do 1/16777216-lb. 25¢; do 1/33554432-lb. 25¢; do 1/67108864-lb. 25¢; do 1/134217728-lb. 25¢; do 1/268435456-lb. 25¢; do 1/536870912-lb. 25¢; do 1/1073741824-lb. 25¢; do 1/2147483648-lb. 25¢; do 1/4294967296-lb. 25¢; do 1/8589934592-lb. 25¢; do 1/17179869184-lb. 25¢; do 1/34359738368-lb. 25¢; do 1/68719476736-lb. 25¢; do 1/137438953472-lb. 25¢; do 1/274877907944-lb. 25¢; do 1/549755815888-lb. 25¢; do 1/1099511631776-lb. 25¢; 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LEBANON COUNTY NOTES

A large number of enormous, gnarled, knotty oak logs, together with locust, chestnut and cherry are being sawed at the mill east of here. The lumber is used by the surrounding farmers in repairing fences, buildings and in the erection of new dwellings. Some oak logs are so huge that it is almost impossible for the giant saws to begin ripping. A pile of walnut logs also is lying at the railway awaiting shipment. These valuable trunks were bought and gathered by the same person who has made large shipments to foreign countries in the past.

All field crops are doing well with the exception of alsike and red clover which were frozen to the ground and which are unable to renew shoots on account of the timothy and alfalfa which did not suffer very much and which apparently is choking the less hardy grasses.

The cut worm and the blackbird are creating havoc in many corn fields. The increase of blackbirds will have to be checked by the state Legislature very shortly.

Store goods are still too high. Potatoes bring from five to thirty-five cents a bushel. Many old potatoes will have to be dumped onto the manure pile. Eggs, 22c; butter, 36c, as to grade; milk, \$1.65 per cwt.; best fat steers, 8c.—R. I. W.

MARYLAND NOTES

Climatic maps of Maryland issued by the State Weather Service show that the climate of Maryland is one of the most remarkable in the United States for the growing of crops. There are three maps, the first giving the number of days between the killing frost in the spring and the first in the fall. This shows that the average runs from 180 days on the northern border to 220 days in the southern, giving an average of about 200 days when the whole state is taken into consideration. This is one of the longest growing seasons in the country. The second map shows the amount of rainfall in the various parts of the state. The average for the entire state is slightly over 40 inches, which is deemed the ideal amount by agricultural experts. The third map shows the average annual temperature, which ranges from 52 degrees at the extreme north to 57 at the extreme south. The summers here are only slightly warmer than in the north, but the winters are much more mild.

Ten thousand acres of Queen Anne county's land, or about 18 per cent of the total wheat acreage of the county, this year will produce practically no wheat, due to the recent disastrous storm, and unless steps are taken to utilize this vast expanse of fertile lands by the planting of some other crops, production in the county may reach the lowest level in years. The majority of farmers already have as much ground in corn as they can handle to advantage, and agriculturists in the area that was visited by the storm are confronted by the problem of selecting a crop that can be grown this summer. County Demonstrator Oliver C. Jones offers a suggestion that soy beans be grown in the place of wheat, saying that they can be planted as late as June 15 and yet be harvested for seed and followed by wheat in the fall.

At a meeting of the Eastern (Md.) Farmer's Association last week the committee appointed to wait on the Threshermen's Association reported the latter refused to consider their demand for eight cents a bushel.



Power and Light
with the Quiet Knight

The Willys-Knight
Sleeve-Valve Engine

THERE could be no better evidence of keeping faith with the public than this—to share our ability to produce quality products on a quantity basis with everyone in North America who needs electricity.

In the famous Willys Light we have swept aside precedent and given every home the benefit of bed rock quality at rock bottom prices.

At its present low price of \$525 there can and will be no further reduction. Already we are meeting the farmer more than half way—giving him the great advantage of a

practical, complete power and light plant, backed by national resources and service, at an unheard-of price.

This wonderful reduction in price is no more extraordinary than the wonderful service Willys Light is giving hundreds of homes.

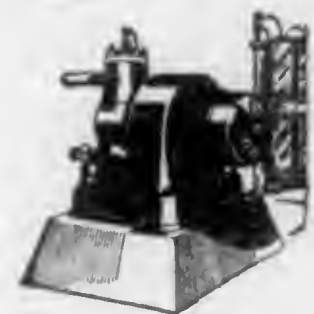
The famous Willys-Knight engine is only one exclusive superiority, in addition Willys Light has fifty distinct advantages. These combined with its new low price warrant your immediate action. See your nearest Willys Light dealer or write for booklet.



\$295

—And here is the Electric Plant that will revolutionize farm lighting—Willys Light Junior. Somewhat smaller but in every other respect measuring up to Willys Light quality, this plant is big enough for lights and small power uses. At this low price, you can now have the electricity you have been waiting for.

Willys Light Junior has the wonderful Auto-Lite engine generator, a battery of ample capacity and is of standard voltage.



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Continuous Open Door Front. Permanent steel ladder attached. Size 18' x 20' \$101.00. Size 18' x 24' \$101.25. Size 12' x 20' \$56.00. Other sizes in proportion.

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The Economy of a Good Silo

Low Prices Received for Dairy Products Increase the Importance of Careful Feeding

By R. H. MECKLENBORG

With the thought of a silo, comes a mental picture of just what is wanted—how much money must be spent and what the returns should be for the investment.

The first and fundamental purpose of the silo

do this. You often see piles of mouldy or rotten silage beside barns during the winter feeding time. The reason for this is that so many silos are not air-tight. They are not frost-proof. Their joints have opened enough to let in the air and the weather, or the material from which the silo is constructed disintegrates from contact with the acid in the silage.

The construction of the walls as to their resistance to cold and moisture, the manner of anchoring and the foundation should all be considered. Almost all silos work well when they are new. They may be alright for several years, but if you go to the expense of erecting a silo, you want that job over for a life time. The person buying a silo should look for service in saving silage, economy in building and long-lasting, long-service qualities.

Corn should be placed in the silo at the time when the kernels are commencing to dent and other fodder before the stems reach the woolly stage. When the fodder is too green, there exists a danger of rotting. If the crops are too ripe and dry, fermentation will not take place unless water is applied in the blower and distributed throughout the mass.

Pea and soy bean vines, clover and alfalfa, should be cut and left on the ground until wilted before being placed in the silo with corn, unless the corn is well matured. In that event, it is best to store them as soon as cut, so to furnish the necessary moisture to start the fermentation.

It is a good plan to drill corn intended for the silo and after the last cultivation, plant cow peas between the rows. The pea vine will climb the stalk and can be put with the corn. The adoption of this method permits of much labor being saved and a fairly well balanced ration being secured. Sunflowers are sometimes added with good results. Millet has not been found to be practical, due to the fact that the stems seem to mould.

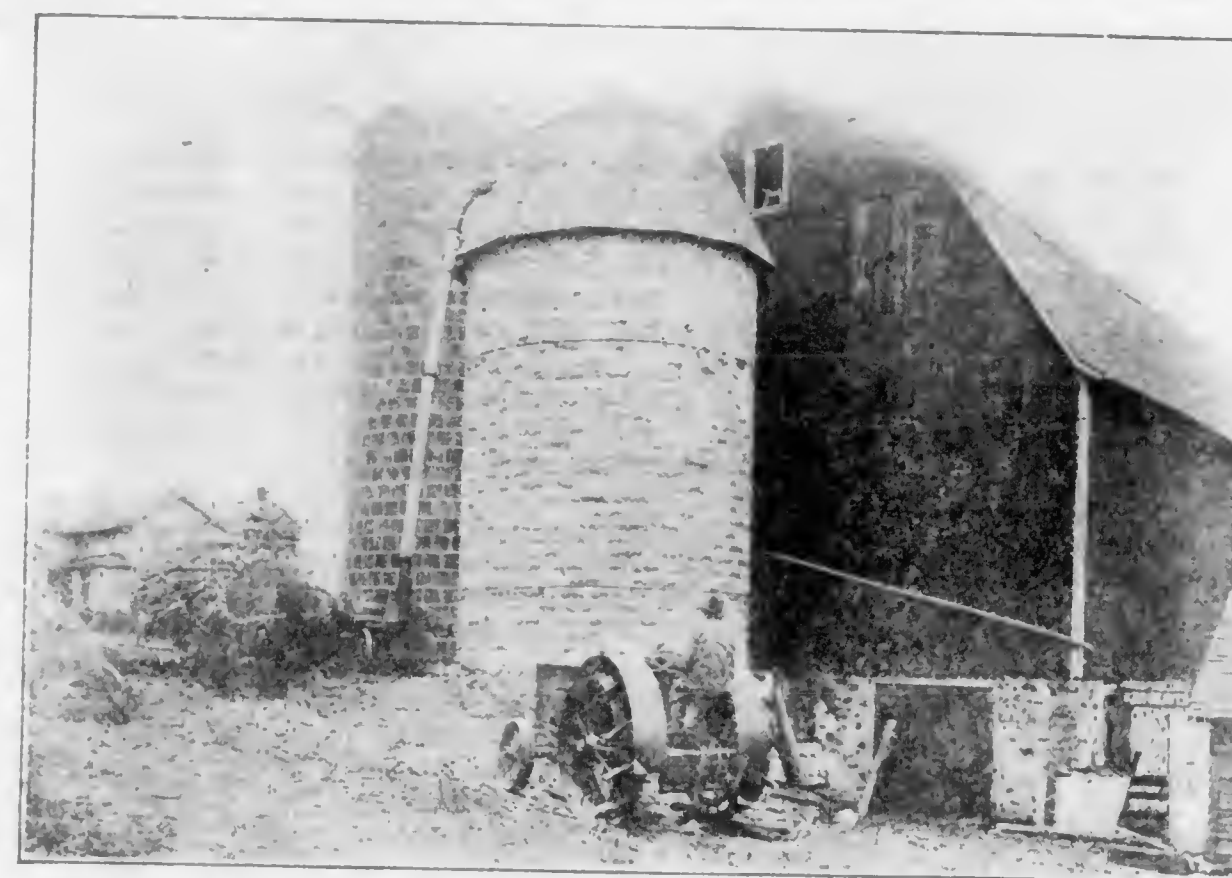
When the silo is filled, the top should be covered with a layer of hay or straw which has been run thru the cutter. In some cases oats are sown on top in conjunction with the cut hay or straw and they serve to good advantage as an additional precaution against mould. The top cover should be wet down and made compact.

When the silage is exposed to the air for a few days, it begins to spoil; hence care should be exercised in determining the number of cattle to be fed when the silo is constructed. At least two (Continued on Page 11).

The following table gives the size of silo, capacity in tons, number of acres required to fill it, estimating 15 tons per acre, and the number of cows it will feed six months, giving them 40 pounds daily:

Diameter	Height	Capacity, Tons	Acres, 15 tons per acre	No. of cows
10	20	24	3	8
12	20	40	3	11
12	24	49	3 2-5	13
12	28	60	4	15
14	22	61	4 1-2	17
14	24	67	4 2-3	19
14	26	73	4 3-4	21
14	30	93	6	23
16	24	87	6 2-5	24
16	26	97	7	26
16	30	119	8	30
18	30	154	10 1-5	37
18	36	189	12 1-5	45

is to save. Then if saving is to be the keynote, the place to begin such economy is in the selection of the silo. One should keep in mind the fact that the average silo holds \$500 worth of



Where Conditions Permit it Pays to Have a Silo of Large Diameter for Use During the Heavy Feeding Season and a Smaller One For Other Times

Today the silo is one of the farmer's main fortifications. Economy and efficiency in production are the main problems of those who are trying to adjust themselves to conditions imposed by the falling markets. The silo should be the first consideration. Even bankers in many localities are awakening to the fact that silos are the means of better farming, increased milk and beef production with greater economy and larger farm profits and are advising and in many cases actually helping farmers get silos.

All farmers have learned that they must not pile their grain on the ground if they wish to avoid loss of profits, and many have learned that they are making practically the same mistake by letting 40 per cent of the feeding value of their corn go to waste in the field in the form of stalks, leaves and husks.

corn and if it is cheap and poorly constructed there can be only one result and that is spoiled silage to the extent of perhaps 20 per cent or \$100. No man wants a silo that will not save all the silage, yet there are many that will not

The Trend of Land Values

Crop Values Per Acre Since 1919 Have Dropped Far Below Plow Land Values

POSSIBLY before and certainly ever since Abraham and Lot found it necessary to divide the land to keep their herdsmen from quarreling there has been a land problem. In each passing century it has become more acute. Many of the greatest events, wars, immigrations and political struggles in human history have been based on a land problem.

In the United States one of our chief land difficulties is that of valuation. This has been particularly true in the last twenty years since land values per acre have quadrupled in that period. Farmers who owned or purchased land during this interval have had an income from farming much higher than it would have been if limited to the sale of products grown on the farm.

The accompanying chart gives a picture of the history of land values during the last two decades. The Census of 1919 found them to be a little more than twice as high as ten years before and estimates made since by the Department of Agriculture show that they practically doubled again from 1919 to 1920. Data from the Census of 1920 so far as published bear out these estimates.

Before 1900, land was considered a safe investment because of the stability of prices, but after values had been advancing steadily for several years, it was generally assumed that these advances would continue. Then land was prized as an investment not for the return in the form of rent but because of the expectation of an increase in the value per acre. This went along merrily enough until prices in some sections got so high about 1910 to 1915 that the average return in the form of rent only amounted to about one-half the current interest rate on the market value of the land. Then it became more profitable to rent land than to own it unless a continuous increase in the value per acre were assured. But if the value rose higher it was still more difficult to earn an adequate rate of interest. Also the increased return from higher land value could only be realized upon by selling the land itself. In short it was not a very satisfactory deal for the working farmer.

Finally the war came along bringing higher prices for farm products and eventually starting a land boom which carried land values up to a new pinnacle. Then the collapse in the prices of grain and livestock arrived and average land prices are going down their first setback in a quarter of a century.

What caused the advance in land values, especially that part of it which preceded the war period? Were the conditions at that time temporary or are they of a permanent character?

The principal factor determining the value of land is its earning capacity. Anything which makes farming more profitable tends to increase the price of land.

One reason why land values rose in the pre-war period was that the prices of farm products advanced. Following the crisis of 1893 these prices of farm products remained low for several years, part of the time below cost of production, but about 1898 they began to go higher and after two or three years these higher prices affected the value of the land. Costs of production, aside from rent, also rose but probably with less rapidity. The records of the Department of Agriculture show an increase in the yield per acre of our leading farm crops during the past twenty years of about 15 per cent or over one-half of one per cent a year. With higher prices for farm products and larger yields per acre, naturally the crop values per acre rose. The chart shows that in the period from 1899 to 1909 crop values advanced from an index figure of 37 to 191. Land advanced still more rapidly. Also in the next five years crop values changed but little while land values kept on rising. Evidently other important factors were at work.

This brings us to the second cause of rising land values during the past 25 years. Good plow land had nearly all passed into private hands by

the end of the nineteenth century. Each census up to and including 1900 showed a big increase in the amount of tillable land, but the 1910 census and the 1920 census so far as made public show only small increases. And yet the improved land in farms in 1919 was only 25 per cent of the total land area of the country. Increases now mean, in most cases, the use of less desirable areas. The population, especially the urban population, of the United States has been growing, and the pressure of a growing population upon a fixed land supply inevitably advances the price.

There are instances in which much of the increase in the value of the land has been due to investment of the profits and savings of the farmer in the construction of permanent improvements such as barns, houses, granaries, fences, drainage systems and to clearing the fields of stumps and stones. Lower interest rates during the early part of this century also tended to raise land values and would have done so aside from any increase in the net profits per acre.

Some other factors which have helped to make farming more profitable and eventually advanced land values are: more effective machinery, better livestock, the development of new crops such as alfalfa, the use of silos, better facilities for reaching markets thru railroad extensions or otherwise, and improved business methods in marketing such as producers' marketing organizations. The demand for country homes on the part of city people has been an important factor in raising land values in the vicinity of

come more effective, permanent improvements will be constructed on the farms and in the community. These and most of the other factors which helped to advance land prices in the past will continue to operate. But a generation or two may be required to restore the level of land prices of a year ago.

As we have seen, any factor which increases profits in farming tends ultimately to raise the price of land. Such increases in land value necessarily raise the land charges in the form of interest and taxes to be counted in subsequent costs of production. These charges in turn tend to swallow up what would have been profits. As a result, over long periods farming seldom shows any "profits" above costs of production even though the land values may be rising all the time and the net worth of farmers may show a big increase. This, by the way, is one of the big difficulties to be overcome in a cost-plus plan as applied to farming.

The tendency for land values to advance and absorb the lion's share of any economic betterments in the position of the farmer is almost as old as agriculture itself. Some students of rural economy even claim that farm poverty is due chiefly to over-capitalization of the land.

We can be sure also from a practical viewpoint, that as long as our present economic scheme of land tenure persists, this tendency on the part of land values will remain. For example, the measures now being devised by farm organizations in marketing, legislation, finance or otherwise to improve the farmer's position will exert an influence in the direction of sustaining or advancing land values.

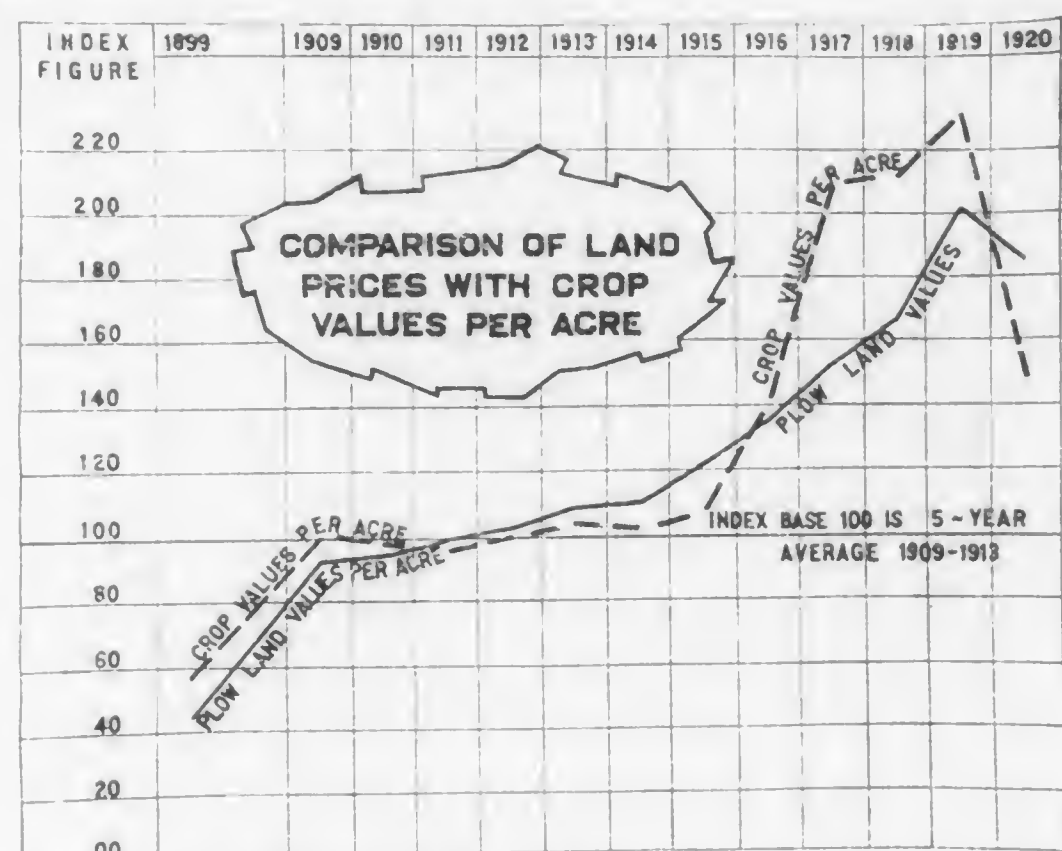
It may be possible, however, to correct one troublesome factor. Farmers in the past have been prone to underestimate costs of production aside from rent and thus to overestimate the earning capacity of the land itself. They have overlooked the labor of the members of the family, or depreciation on buildings, machinery and even depreciation of the land itself. With these items excluded or counted at less than their full worth, cost marks which were too low were obtained and farmers have been willing to pay too much for land.

Putting the price of land too high harms chiefly the farmer. The sufferer from the aftermath of the recent land boom are the young people, the renters and others of small means who invested their savings in land under the mistaken notion that prices would stay high indefinitely and whose finances were smothered out by the decline in both farm products

and farm land. Actual farmers do not want land values to be higher than the price of farm products justifies after all the other elements in the full economic cost of production are satisfied. Nor is it desirable that they should receive a part of their income from farming in the form of a gradual advance in land values if those values are above the point at which the prevailing cash or crop-share rent will pay taxes and a fair rate of interest in the valuation. The farmer or land owner whose land, purchased for \$50 an acre, later rises to \$250 is better off even if he gets only 2 per cent on the higher valuation but even he retires and the land is bought by a farmer who must pay for it from the produce, this man must labor unduly hard and pull his family and himself down to a low standard of living. He is the individual who is hurt.

In brief, there are factors at work which will again advance land values in the United States but it is highly undesirable that they should advance more rapidly than the earning power of the land really justifies.—Glenn G. Hayes.

The highest mountain in the State of New York is Mount Marcy, a peak in the Adirondacks, which rises 5344 feet above sea level. The average or mean elevation of the state, as estimated by the United States Geological Survey, Department of the Interior, is 900 feet.



Crop Values and Land Prices Are Now Out of Adjustment. To Re-establish Agriculture on a Sound Basis They Must Return to a Relationship More Like That Prevailing From 1899 to 1913. It Seems Probable That This Will Be Brought About Through an Advance in Crop Values and Parity Thru a Decline in Land Prices.

the towns and large cities of the United States.

By the end of 1920 the land boom was over and the index figure for land prices had dropped from 202 to 184. The average value of all plow land declined from \$90.01 per acre at the end of 1919 to \$83.78 at the end of 1920. Unofficial reports since the first of the present year point to a further decrease of 10 to 20 per cent since the Bureau of Crop Estimates gathered its figures. The chart shows only the decline in the official estimate.

What will be the future course of land prices? Will the decline now under way continue or will values become stabilized around the present level or will the upward course be resumed?

At the present time land values are unsettled with few farms changing hands. No one wishes to purchase land at high prices if farm products are to stay down. Land has declined much less than grain and livestock. Cash rents for 1921 are probably 50 per cent higher than before the war while prices paid to farmers for their products are no higher than the prewar level. Land and rents must come down or farm products must go up.

Looking far ahead, it is certain that land prices sometime will return again to the high point at the crest of the boom. Population will become more dense, the demand for farm products will increase, methods of farming will be-

Conserving the Peruvian Guano Supply

The Once Flourishing Guano Industry is Again Becoming Important

By J. G. LIPMAN
Director New Jersey Experiment Station

THE FAME of Peruvian guano spread thruout England between 1840 and 1850. Its value as a fertilizer was, however, recognized long before that time in some of the countries of South America. The celebrated traveler and naturalist, Alexander von Humboldt, was so impressed with the results obtained in its use that he was led to bring a quantity of it to Europe in 1840. He also brought back with him stories of the ancient use of guano in Chili, Peru and Bolivia, of the methods used to exploit the deposits of guano and of the laws passed to protect against wasting the supply of this valuable fertilizer.

The term "guano" or "huano" is of Spanish origin and corresponds to the English word "dung." There are many different kinds of guano, distinguished by their place of origin. There are also so-called guanos, such as fish guano, bat guano, phosphatic guano, etc., that differ from the true guano, both in composition and in their value for fertilizer purposes.

The true guanos represent the accumulation of vast quantities of the excrements of gulls and of other sea birds. Mixed with these excrements are the remains of fishes and of the birds themselves. In the dry air of the western coast of South America the droppings of the birds lose their moisture quickly and are thus preserved from decay. Scarcely any rain falls in this region, hence the soluble salts of ammonia, and likewise the other soluble salts, are not washed out. This will account for the large proportion of ammonia found in the best grades of guano.

For instance, the material at one time found on Angamos, a rocky promontory on the coast of Bolivia, contained as high as 24 per cent of ammonia. Somewhat less rich but nevertheless very valuable were the deposits of the Chincha Islands, just off the coast of Peru. Aside from its nitrogen or ammonia, guano contains a high percentage of phosphoric acid and also some potash. The best guanos contain 12 to 15 per cent of nitrogen and the same amount of phosphoric acid. The next grade may contain 5 to 7 per cent of nitrogen and 15 to 20 per cent of phosphoric acid. The still poorer grades contain less nitrogen and more phosphoric acid. The potash content varies from a fraction of one per cent to as much as two per cent, and occasionally even more.

Experiments with Peruvian guano were first made in England in 1840. These were carried out under the auspices of the Royal Agricultural Society, and the results were so promising as to lead to the placing of large orders. Also in Germany and some of the other European countries the remarkable manurial value of guano was soon recognized. By 1850, England was importing guano at the rate of 200,000 tons per annum, and during the period 1840 to 1890 England imported and used a total of about 5,000,000 tons of Peruvian guano. By far the largest supply came from the Chincha Islands, for they yielded in a period of 30 years nearly 10,000,000 tons of high grade guano. In some places the deposits on these small islands were 100 to 200 feet deep and represented an accumulation of many centuries. After the exhaustion of the Chincha Islands deposits considerable quantities were obtained from the islands of Guanape and Macabi. Later the islands of Ballestas, Pabellon de Plata, Punta de Lobos, Huanillos, and others were made to pay tribute to the exporters of guano.

The meaning of guano in the upbuilding of British agriculture is clearly shown by Aikman. He tells us that: "In the consideration of artificial manures, guano deserves the first place. This it does mainly on historical grounds, as it is now largely a manure of the past. Not merely has it been used in agriculture to an extent which no other artificial manure has as yet approximated, but its influence on agricultural practice has been enormous. Introduced into this country about the middle of the present century, it was the first of artificial manures to be used in large quantities. It may be thus described as having introduced the modern system of intensive

cultivation, and given rise to the now almost universal practice of artificial manuring." But before many years had passed the best of the Peruvian guano had become exhausted. Unscrupulous dealers began to adulterate guano with all sorts of worthless materials. Soon farmers found that the once powerful and stimulating fertilizer was no longer as effective, and therefore they turned their attention to newer and more promising sources of plant food, such as nitrate of soda, sulphate of ammonia and phosphate and potash salts. Gradually the imports of guano into England decreased. The high-water mark was reached in 1870 with an importation of 247,000 tons. Ten years later only 58,621 tons were imported. In 1890 there were only 19,000 tons imported and in 1900 the amount was even smaller. In the following twenty years the exports of guano to Europe and North America decreased still further. The total exports to Europe and some of the other countries amounted to less than 21,000 tons in 1915, and of this amount England took 2459 tons. Similarly, the exports to the United States suffered a marked decline between 1918 and 1920.

Soon after 1900 the government of Peru became aware of the fact that the decline in the production of guano meant a very serious loss to the country. A survey showed that the guano-

1917-1918. The estimated production for 1920 is about 82,000 tons, showing that the guano production of Peru is on the upgrade. The farmers of Peru, recognizing the great value of guano as a fertilizer, use it regularly, and the country's requirements are about 70,000 per annum. Beyond that the surplus is available for export. It is gratifying to see, therefore, that the production, which has trebled within the past ten years, is now not only sufficient for meeting the domestic needs but also for making available an export surplus. The same policy continued in the future will make possible a gradually increasing quantity for export to the United States and other countries. To quote Dr. Coker again: "A final application to be made in this connection is not the least in importance. The enforcement of any broad and effective plan of protection of guano birds was confronted ten or twelve years ago with obstacles which one might fairly have considered insurmountable; foreign obligations with their customary difficulties of adjustment; national agricultural demands so exceeding the yearly production as to make temporary curtailment most aggravating to Peruvian agriculturists; restive political conditions such as usually demand the service of the present rather than of the future. How do such difficulties compare with those which confront the production of fresh-water mussels or the development of the oyster industry in the Chesapeake Bay, for example?" Surely, thoughtful men might well apply the lesson in the service of some of our own natural resources.

EASTERN AGRICULTURE

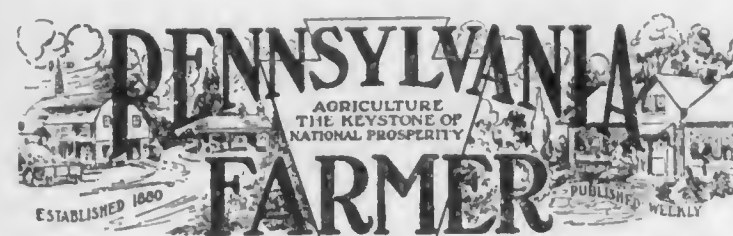
Secretary of Agriculture Wallace in a recent statement said: "Eastern agriculture has the opportunity of regaining, in large measure, what it lost half a century ago when the prairies came under the plow and flooded the Eastern markets with agricultural products. The grasping of this opportunity will bring a large measure of profit and stability to Eastern agriculture, not only, but to manufacturing and commercial interests as well. High freight rates give Eastern farmers an advantage over the great agricultural regions of the West in supplying foodstuffs and raw materials to the great centers of population along the Atlantic seaboard. It follows, therefore, that industrial and mercantile interests should give all the assistance they can toward enabling Eastern farmers to take advantage of the present situation by building up a more permanent and more self-sufficient agriculture. I urge this, not merely as a matter of service to the country but as good business. The manufacturer who, in this wise, casts bread upon the waters will see it return to him beyond any shadow of doubt.

"I realize that a short-sighted view of the situation might show it in a different light. Naturally, manufacturers would like to see a reduction in the prices of food products and raw materials. At the same time, they wish to extend their own foreign markets as far as possible. In the short view, it might seem to their advantage to send shiploads of their manufactured goods to the great food-producing countries south of us and to bring those ships back loaded with food produced on cheap land and by the cheapest of labor. No one can deny the temporary enlargement of our foreign markets for manufactured goods to be gained in that way. But that advantage, and a great deal more with it, would be lost thru the weakened buying power of our own agriculture and, in no great while, the country as a whole would have to pay a heavy penalty.

"Let us not be deluded by the fact that just now there appears to be a surplus of food products and the raw materials of manufacture. The production of large crops coincided with greatly lessened consumption, both in this country and in other principal countries of the world. Before the war consumption was rapidly overtaking production. That tendency was not reversed by the



A New Jersey Homestead



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VOLUME 49 NUMBER 25

OUR JOB is to serve our readers. Whenever you are
puzzled, write to us and we will help you if we can.
—The Editors

If you had seen but one day of war, you would pray
to God you might never see another.
—Duke of Wellington.

The Clover Failure

FARMERS in the Middle Atlantic States find, as harvest approaches, that their clover crops are far below the average condition. In many instances fields which looked promising at the close of winter show no clover at all now. It is generally believed that the freezing weather at the close of April and the early part of May killed the tender plants which had been pushed rapidly by the previous warm spell. The failure of a clover crop is a serious matter because the farmer is deprived of an important source of protein and loses a valuable soil improver. Those who have planted soybeans will have a good substitute for both these uses. It is still possible for those who have not done so to plant an early variety at once and secure a good crop of valuable forage, providing frost does not come too early.

George P. Hampton

GEORGE P. HAMPTON, Managing Director of the Farmers' National Council, died suddenly at Washington a few days ago. For a number of years Mr. Hampton has been among the foremost of the farm leaders in this country. He was a born fighter and while lending his assistance to many popular movements of farmers he frequently stood with the minority in the championship of others which were considered radical by the more conservative. He believed that organized labor and farmers had many common causes and was promoting a plan by which farmers and consumers might deal direct. He strenuously opposed the Cimmmins-Esch Law and urged a two-year extension of government operation of railroads. Even those who disagreed with Mr. Hampton acknowledged his unusual ability and his honesty of conviction. The following is quoted from an eulogy prepared by U. S. Senator E. F. Ladd:

"Many men are admired for their ability and keenness of intellect. George Hampton was loved by thousands because, in addition to these qualities, he possessed a heart and a conscience. If a thing was right, that settled it. He would fight for it to the end, even tho he fought alone, even tho it cost him every cent he had. It was his heroic courage, his burning sincerity, his utter unselfishness, and his unswerving fidelity to democratic ideals that endeared him to all who knew and worked with him. He was never known to compromise with iniquity or injustice. And yet in the midst of the fray he kept sweet. Altho he hated evil, he loved men, and had the wisdom to condemn the system which makes men bad rather than the men who are themselves the victims of the system."

Pennsylvania Farmer

Women on School Boards

AS THE SEASON approaches when candidates for local offices will be nominated, we wish again to urge the nomination and election of women to school boards. Some of the fundamental weaknesses of the rural schools are things which the feminine mind is best fitted to correct. She is the acknowledged leader and director in the establishment and conduct of a home, and many elements which go to make a well-ordered home are found in a well-conducted school. These factors can not all be furnished by female teachers alone, any more than a wife can make a successful home if she has no voice in equipping and maintaining it. There are such homes—so-called—but they are failures, just as many schools are failures because women are not given a voice in the management.

If there is one public activity where politics should not be in evidence it is in the management of our schools, yet in some districts we find as much log-rolling and peanut-politics as is found any place. As long as this condition is allowed to continue and men are permitted to make the office of school director simply an adjunct to a political ring, the education of the children will suffer and the schools remain a reproach to our generation. We are firm in the belief that women will ever place the welfare of their children above the interests of partisan politics.

Seeing is Believing

ONE of the modern farmer's methods of learning is going to see. The steadily increasing number of "tours" taken by farmers to see what other farmers are doing, and to observe the results of station experiments, is not only a pleasant but profitable custom. The farmer who never sprays, for instance, is convinced of its value when no amount of argument would convince him. Tradition and custom fasten ideas in our minds and they are hard to change, but we all have confidence in what we see, and when our eyes behold the results which follow certain causes most of us are willing to accept them as true. Of course there are a few people who will not then be convinced, such as the old gentleman who declared "there ain't no such animal" even while he stood looking at a camel. If the primary cause of the development of most neighborhoods noted for good farming could be traced, we would find, in most instances, that the good methods were adopted and practiced first by one or more progressive men. These methods were gradually adopted by their neighbors after they saw the results, even tho they may have scoffed at first.

For this reason we urge all who can possibly do so to take a day or two off whenever there is an opportunity to join a tour of inspection. The information gained will, in most instances, more than repay the time and expense; besides, the change and the social features are well worth the effort. Remember, "Seeing is believing."

False Prophets

WE DO NOT wish to ridicule those who, last year, advised farmers to hold their wheat for \$3, or those who prophesied a "farmers' strike" when the bottom fell out of the markets, or those who declared that agriculture was bankrupt and that farmers would be unable to continue, but we would like to know just how they stand in the estimation of those who were misled by these false prophets. It is to be hoped that since none of these things transpired the ridiculous position in which the prophets find themselves will be sufficient to teach a lesson in caution and humility. The harm done to the whole cause of agriculture is not offset by the cheap notoriety gained at the time. Not only did the talk add to the discouragement and uncertainty of farmers, but it placed them in a false position before the public and created a sentiment that is bearing fruit in the form of opposition to needed legislation.

Farmers did lose money in the price slump but they did not go bankrupt. They were "sore," and naturally so, but there was no strike, as the present acreage shows. All farmers knew as well as the would-be prophets just what troubles existed, but events show that the rank and file were made of better stuff than were those who saw nothing but dire disaster ahead. This criticism is not directed to the real leaders in agricultural progress—those who have a vision of better things and the intelligence to fairly estimate the relations between cause and effect—but we are interested in stopping the clutter of those whose chief stock in trade is spreading gloom and pessimism. Agriculture, like other industries, needs helpful, constructive criticism and leadership in these critical times.

The Plum Tree

A PROMINENT public man once said of office-holders that "few die and none resign." That is not only still true, but we have added a smoothly-working system of multiplication by which the number of "public servants" is continually increased. The Federal Government finds it difficult to get rid of the great army of people employed as emergency helpers during the war. There are tens of thousands still on the payroll because it is politically inexpedient to discharge them. Departments, bureaus, commissions, committees of every kind and form have been established in national, state, county and municipal governments until the total number of people employed by the public forms a large percentage of the population. Is it any wonder that taxes are high and still climbing? This tendency is likely to continue until the people stop running to state and national governments for help which they should render for themselves. Self help is the best help, and usually much cheaper.

Our Washington Letter

Hearings on the French-Capper truth in fabric bill, before a sub-committee of the Senate Interstate Commerce Committee of which Senator James P. Watson of Indiana is chairman, have been in progress during the past two weeks. The bill has the support of all the farmers' and wool growers' organizations, the cleaners and dyers, the women's clubs, and many fabric and clothing manufacturers and dealers. It is opposed by certain large woolen and shoddy textile and clothing interests.

Dr. T. C. Atkeson, Washington representative of the National Grange, declared that opposition to the truth in fabric bill came from those who desire to profit by subjecting the public to the necessity of buying commodities which are not what they are represented to be. "Nobody wants to prevent the use of substitutes for wool. We as consumers merely desire to know what we are buying," said Dr. Atkeson. "Like the pure-food law this is a measure which will be practically self enforcing."

J. F. Walker, of Ohio, said the bill was to prevent the debasing methods which have been resorted to by the textile makers during the last three years. J. M. McDowell, representing sheep associations in Ohio, West Virginia and Pennsylvania, declared that "honest men won't object to labeling their goods with what they actually contain, while other fellows ought to be made to do it."

Friends of the bill gave conclusive evidence that the wool producers would be at the mercy of the shoddy manufacturers so long as the dealers were permitted to sell shoddy fabrics as "all wool," and that if this practice is continued it will mean the ruin of the sheep industry.

A bill by Senator Capper of Kansas to include the secretaries of agriculture and commerce as members of the Federal Reserve Board, has been endorsed by the senatorial agricultural bloc. The bloc also proposed at its last meeting the reduction of Federal Reserve rediscount rates and time extension on agricultural paper. Senator Smith of South Carolina has drafted a bill amending the Federal Reserve act to make the time limit on agricultural loans one year instead of the present six months' limit when secured by warehouse receipts. Senator Smith has discussed with President Harding the matter of reducing the rediscount rates on agricultural paper, and the President has given him assurance that this proposition is receiving the attention of the administration in the most effective way possible.

"Bloc" is a recently imported word, the term in European parliamentary usage meaning the solidification of members of like mind, all representing a certain interest with a compact organization. It is now applied to such inter-congress organizations of senators and congressmen advocating certain principles and legislation.

There have been such consolidations of interests in Congress before. In fact, the idea is not a new one. But it is only since the senators and congressmen from the great agricultural states have organized for the purpose of acting together in the promotion of legislation which will give the farmers equal opportunity with other classes, have the newspapers and writers employed by the big interests discovered that the "bloc" idea is a menace to the country and should be suppressed.

A bill introduced by Representatives Tinscher of Kansas is now under consideration by the

Pennsylvania Farmer

House Committee on Agriculture. This bill provides that the Secretary of Agriculture shall investigate, determine and pay the amount of the actual loss sustained by farmers and grain dealers who owned actual crops of the 1917 crop, and lost by the Food Administration's price fixing policy. The measure of such actual loss is placed at sixty cents a bushel, the difference in the market price of wheat at the time the Hoover order went into effect and the price fixed by the Food Administration.

In the discussion it was asserted that the co-operators and coal mine owners, coal dealers and other interests had an equally good case against the government because of Federal price fixing during the war.

Hearings on the Capper-Volstead farmers' co-operative marketing bill are developing some convincing testimony in favor of the bill in the Senate judiciary committee. Secretary of Agriculture Wallace has addressed a letter to Senator G. W. Norris, chairman of the Senate Committee on Agriculture, in which he says:

"I asked the solicitor of the department to give me his opinion on the legal questions covered by the bill. He advises me that he does not find anything in this bill that will permit agricultural associations to do any of those acts forbidden by the anti-trust laws and that, apparently, the only purpose of the bill is to free co-operative associations from the implied restrictions contained in Section 6 of the Clayton act and by thus freeing them putting them upon the same basis as corporations and associations engaged in any other line of business."

"As the bill passed the House, it would not authorize an association of agricultural producers to engage in unlawful restraints upon trade or to form monopolies or to do any other things forbidden by the anti-trust laws. It simply permits farmers to form co-operative associations, with or without capital stock, for the purpose of collectively processing, preparing for market, handling and marketing in interstate and foreign commerce their agricultural products, and it authorizes such associations to have a common marketing agency."—E. E. Reynolds.

HARRISBURG LETTER

Seed Law Plans.—Continuance of the strike at the State Printery is affecting operation of the proposed new seed inspection law and other measures concerning agriculture which are to become operative in the next ninety days and state officials are in a quandary how to meet a situation never before encountered in state affairs. The law requires all printing to be done by the man having the state contract and the few job printing plants hereabouts which could handle any work sent to them as an emergency proposition have so much ahead they cannot undertake it even if so inclined. As a consequence the seed trade has been unable to get copies of the new law, which has some provisions very different from the act of 1913, and there are many people interested who cannot be supplied. The department's facilities for mimeographing are unable to meet the demand and unless the state can get the laws printed there may be some delays in securing full enforcement. It is probable a ruling will be made in a day or so in the matter. The nursery inspection law and other amendments to laws relative to agriculture are being similarly retarded and the policy in regard to the seed law may determine what will be done with them.

The Gasoline Tax.—Preparations are being made for collection of the state tax on gasoline after September 1 and as a preliminary names of persons and firms dealing in gasoline are being assembled by Auditor General Samuel S. Lewis, who says he will have the mercantile appraisers do that work instead of employing people especially for the purpose. The dealers will be required to make sworn statements of sales and to pay the taxes on such basis, the state having authority to make investigations where it is found or suspected frauds are being carried on. Half of the tax will go to the county where collected, which will mean money will be forthcoming in thousands for many of the counties for maintenance of roads or payment of interest or sinking fund charges on highway loans.

State Funds Low.—The general funds of the state are away down and while some school districts are objecting strenuously because they are not receiving their shares from the State Treasury it may be weeks before enough money accumulates to meet the payments. As indicated some years ago the continual creation of special funds, such as the automobile license revenue which is earmarked for roads; hunters' licenses, banking examination and other fees, devoted to specific purposes, is bound to cause a decline in the funds applicable for payment of appropriations.

This is one of the reasons why the administration hunted up new sources of revenue instead of cutting down expenses. The trouble is the revenue of the state is so closely appropriated that any increase is caused at certain seasons when no taxes are payable. There are various funds bulging with money which cannot be used for general

purposes, while school districts are asking for money to meet bills.

Adjustment Bound to Come.—In spite of criticism of the new auditor general's drastic policy of cutting down his force it is evident some readjustment of the Capitol situation in regard to employees is bound to come. The Governor has taken cognizance of the extravagance in his call on department charges, including automobiles and long distance telephones, and now some heads of departments have been asking what people are being paid in other states and in business for much the same duties as they perform in Pennsylvania. The Governor is said to contemplate making at an early day a commission under terms of the government and recommend where departments can be merged. It will be a legacy to his successor.

More Road Work.—Altho the state has over six hundred and fifty miles of road under way and has finished 100 miles this year there is to be no let-up in the construction projects. Bids for ninety-three miles will be opened next week and it is the plan to ask for more bids later on. The state will sell \$15,000,000 of road bonds this month, all of which will go into construction on primary roads. By the end of summer Pennsylvania will have more road work under way than any state in the country.

Interstate Inspection.—Under terms of acts passed by the last Legislature the State Bureau of Markets will be in charge of inspection of interstate and intra-state shipments of foods within its province. This is a notable step in advance and will enable the authorities to check shipments which fail to meet Pennsylvania requirements. The Bureau will also get the benefit of special fees coming to it which will be paid to the state and placed to its credit for maintenance.

Department Budget.—The Department of Agriculture's budget is being made up by Secretary Fred Rasmussen. After the passage and approval of the general appropriation bill the secretary is required to apportion the funds available and lay out the work. This business-like arrangement is required in the act reorganizing the department passed in 1919 and the department is run on that principle.—Hamilton, Harrisburg.

NEW YORK LETTER

Painting Farm Buildings.—Scarcity of work in the cities has led many workmen to swing the brush in painting farm buildings. Paint manufacturers are making special bids for farm trade and are offering credit on paint orders. A survey of one leading farm county shows total 71 per cent of its farm buildings have not been painted in five years.

Maple Syrup Association.—The Cortland County Maple Syrup Association has sold 2500 gallons of syrup to the D. L. W. railroad's dining service. The association is gradually disposing of big stock on hand, in drums, gallon cans, or glass bottles, at around \$2 a gallon, varying with the containers used.

Milking Machine Rules.—Uniform regulations prescribing the best manner of operating and cleaning milking machines are to be formulated by a committee named at a recent meeting of Farm Bureau managers at Geneva Experiment Station. The station leads in teaching correct methods of using the machines. The committee includes farm bureau agents, representatives of the Dairymen's League, the state college of agriculture, the experimental state and the New York City board of health.

Teams Cheaper Than Rail Service. A carload of sand was delivered by mistake two miles from its destination in Cortland County. The railroad officials wanted \$50 to move it the two miles. Teams were hired to haul the sand more cheaply than the railroad would do it. This accounts for a good deal of the hard times of the day when transportation fees are too exorbitant to permit normal business.

Rural Health.—Cortland County has been selected for a rural health survey by the State Department of Health and the State College. Experts are securing data and holding health meetings in all the communities of the county.

New Troops of State Police.—Trained men and equipment are being gathered together in Malone to make up the new troop of state police. They will patrol seven northern counties.

Field Days.—Three days of sports and crop and animal inspection are scheduled for the summer Farmers' Week at Cornell on June 23, 24 and 25. About 10,000 farmers are expected to learn new methods and enjoy a period of relaxation.

Farmers' Questionnaires.—The farmers of the state are filling out questionnaires which will ex-

press to the A. F. B. L. their wishes on a number of matters of agricultural policy. The ability to do this all over the country proves the great value of the Farm Bureau in determining farm action to consider such opinion.

MARYLAND LETTER

The champion steer of the Lancaster County Feeders' Show, at Lancaster, Pa., selected for prize from 1305 cattle, has been on exhibition here for the past ten days at one of the amusement parks where it has attracted considerable attention. He weighs 1,310 pounds and was sold at auction to the Schluderberg & Kurder Packing Company of Baltimore at a record price for cattle on hoof—\$757.10, or 67 cents a pound. The backing company bid on the big animal after a spirited contest with about 1000 packers and butchers.

The weather the past week has been decidedly favorable for the crops, according to the report of the state weather bureau, but, altho all were in excellent condition a little rain would be beneficial. Wheat is ripening and rye has headed in Western Maryland. Wheat is doing particularly well on the Eastern Shore, and oats in the southern counties are beginning to head. Peas and strawberries are being harvested in every section excepting the southern counties, where the crop is about exhausted and in Western Maryland, where it is maturing. Tomato acreage, the report says, will probably be below normal this season, but that of sweet potatoes will be large.

The supplying of a carload of wool to be made up into blankets is the aim of the sheep raisers of Baltimore County this year. The success of disposing of wool last year direct from producer to the consumer has encouraged the farmers to continue the practice, and at a meeting last week at Towson, arrangements were completed for sending all the wool in county direct to a mill, have it made into blankets and rugs and sold thru the office of County Agricultural Agent Edward E. McLain at Towson.

The Howard County Farmers' Association, meeting at Ellicott City last week fixed the rate for threshing wheat at five cents per bushel. Seven cents per bushel was charged last year. The cut is attributed to decreased costs of labor and materials.

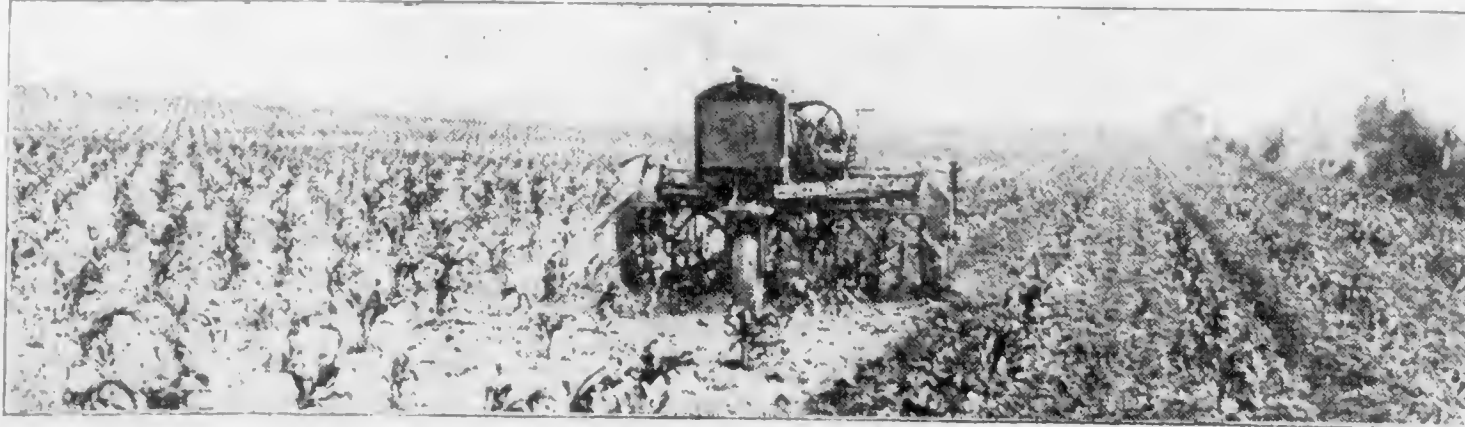
According to the Census Bureau report there were 103,027 sheep on the farms of Maryland on January 1, 1920, as compared with 237,137 on the farms on April 15, 1910. No reason is suggested for the great reduction. The report shows that there were 373 goats on farms January 1, 1920; 43 kids under one year, 190 goats one year old and over raised for fleeces and 640 is the number of "all other goats."

NEW JERSEY NEWS

Milk Reduces Ice Cream.—A reduction in the wholesale cost of milk in New Jersey has caused manufacturers to cut the cost of ice cream. Retail prices of the delicacy at Perth Amboy in Middlesex County, North Bergen in Hudson County, and Trenton in Mercer County are fifty and sixty cents per quart. The wholesale prices are \$1.20 per gallon in Perth Amboy and Newark and \$1.15 in Trenton. It has been stated, that at the present time, it is probably costing the average retailer about 30 cents per quart for bulk ice cream. Where ice cream is selling for 15 cents per dish, and seven or eight dishes are obtained from a quart, the gross profit, it is said, would be from 200 to 300 per cent. It is claimed, that there is a large surplus of milk in this state, and that one of the objects in reducing the price of the lactical fluid, was to increase the consumption and avoid waste.

New Jersey Income Tax.—Of much interest to agriculturists is a part of an address given before the taxing officials from all over the State at the State House by Frank B. Jess, of Camden, president of the State Board of Taxes and Assessment, who stated that the 1921 Legislature took the first step towards the elimination of the tax on personal property, and that it made this move by directing the Special State Tax Commission to draft legislation for the taxing of incomes, as a substitute for the personal property tax. This commission has before it the work of providing for a tax on incomes of persons in New Jersey above \$1000 at a sliding scale not to exceed six per cent per annum with exemptions similar to those allowed by the Federal Income Tax Law. This legislation is to be submitted in the form of a bill or bills at the 1922 session of the Legislature, and, if passed, will go to the people for approval or rejection at the November election in that year.

Inspect Potato Fields.—Members of the Mercer County Board of Agriculture, the agricultural committee of the Trenton Chamber of Commerce and other persons in Central New Jersey interested in farm crops and produce, participated in an automobile run and inspection of the potato fields in this part of the state. Prof. Alva Agee, secretary of the New Jersey State Department of Agriculture, and Dr. W. H. Martin, took part.



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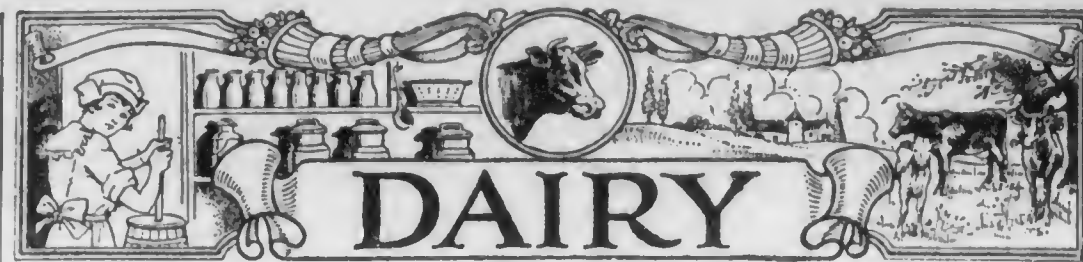
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Butter Production and Consumption

HOW many dairymen know where the bulk of creamery and farm butter of the United States is produced and where consumed? In compiling answers to this question the National Dairy Council has secured some very interesting and valuable material. United States Census reports, Department of Agriculture reports and information gathered from colleges, State Dairy Commissioners, and the general trade have been the basis for all compilations. No effort has been spared in making the work as accurate as possible. However, slight revisions may be made when the census reports are made final on farm butter by states.

In 1909 the farm butter of the United States totaled 994,650,000 pounds; creamery butter 624,764,000 pounds. In 1919 farm butter had decreased 28 per cent in volume, or to 710,000,000 pounds; that of creamery butter had increased 39 per cent, or to 866,850,000 pounds.

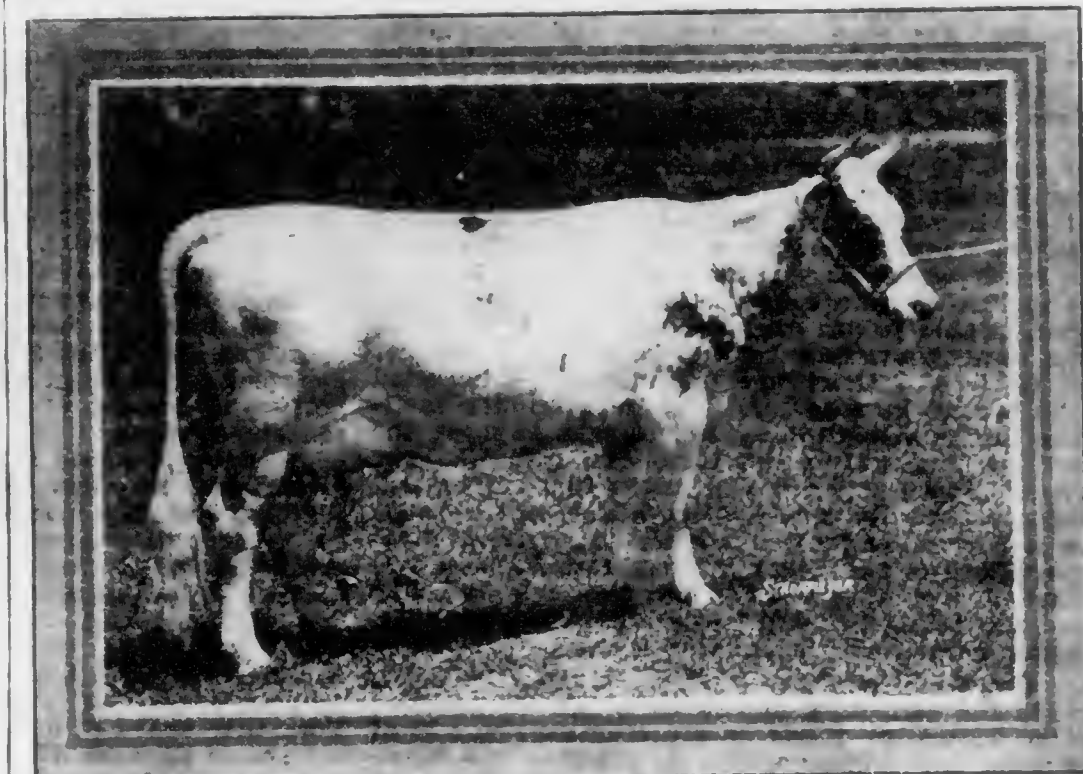
Butter consumption in 1909 was 173 pounds per capita. In 1919 the per capita consumption had decreased 15 per cent, or to 14.55 pounds

creamery butter produced annually in the United States.

Our seven heaviest creamery butter producing and exporting states are as follows—North Dakota, South Dakota, Nebraska, Kansas, Minnesota, Wisconsin and Iowa. They manufacture more than half of the creamery butter made in the United States.

While the southern states do not have a large number of dairy cows, this section manufactures more than one-half of the farm butter of the country. Their total make of creamery butter is less than 33,000,000 pounds, or an amount equal to one-fourth the manufacture of the creamery butter of Minnesota. All of the southern states are importers of creamery butter, tho not to as high a degree as the eastern states, due to their lighter population.

Of the northern states, Illinois, Utah, Wyoming and Montana import from seven to thirty per cent of their consumption of butter. Production of creamery butter varies by states in proportion to population, from Minnesota, which produces fifty-four



Leto's Rosette 48858, Champion Ayrshire in Class E and a Gold Medal Winner. Record, 16,448 Lbs. Milk and 650.11 Lbs. Butterfat

per capita. By applying these average consumption figures by states, according to population, the heavy consuming area is found in the eight eastern states—Massachusetts, Connecticut, Rhode Island, New York, Pennsylvania, New Jersey, Delaware and Maryland.

This district is approximately equal in area to New Mexico, which has a population of only 360,350. These eight eastern states have a population of more than 30,000,000, nearly one-third of the entire population of the United States. The bulk of the population of this section is further centered on the coast area. Heavy market milk demands on local supplies in this thickly settled district result in a low creamery butter production of approximately 28,000,000 pounds. Their consumption of 441,000,000 pounds makes necessary the importation of more than 83 per cent of their butter from the big creamery butter producing states. It will be noted that this total consumption of 441,000,000 pounds is more than one-half of the total

EXPERIENCE WITH A MILKING MACHINE

My experience with a milking machine dates back some three years, at which time we purchased one. We installed it in our barn and operated it with a two-horse power gasoline engine for a few months, and then installed an electric motor, and have had it in constant use ever since.

Now, one of the important arguments in favor of the machine is its sanitary features. Bacteria is carried on dirt, and the way to get it out of milk is not to let it get in. A milking machine draws the fluid directly from the cow's udder thru a rubber tube into a tightly-closed pail, and it is impossible for impurities to enter. Great care is required in hand-milking to avoid getting scales, or hairs, or other impurities

into the milk. So much for the sanitary feature.

The chief advantage to the dairyman is the economic one, and consists of the saving of time and labor. A dual unit machine will milk twenty cows in less time than two men will by hand, and with less excitement to the herd. Three years ago the initial expense of installing the machine did not exceed \$300. The overhead expense for the time the machine has been in use has been but a few dollars.

One thing that must always be kept in mind is that care and cleanliness must be observed, but really not any more so than with other up-to-date dairy utensils. Today, the demand by city people and everybody else is for clean, pure, wholesome milk, and, as a rule, the purchaser is willing to pay for that class of product. The dairyman who is prepared and willing to give his herd and machinery his painstaking care need have no fear of not having a market for his product. The care required in keeping a machine milker in proper condition is not any greater than is required for a cream separator, and most any man or boy with ordinary intelligence can learn to operate the milking machine in a few trials.

The cows, as a rule, prefer the machine with the teat cups to hand-milking. But the person who is not willing to give his cows and utensils the most thorough care and attention would best not have a milking machine, and, indeed, such a person had better not have a herd of cows at all. I am unable to give the exact cost of electric power for the operation of the machine, for the reason that we have not had a meter separate from that thru which the current for light for house, barn, cellar, milk room and washhouse is measured. The whole expense for such current does not exceed \$3 per month taking an average of the year around.—J. G. Foight (A Civil War Veteran)—Westmoreland Co., Pa.

NEW STATE CHAMPION JERSEY COW OF MARYLAND

Victoria of Fairview Farm 324039 qualifies as the new state Jersey champion of Maryland. She produced 14,136 pounds of milk yielding 724.55 pounds of butterfat, starting test at five years and one month of age. Her sire is Lou's Torono 106614, a silver medal bull. Her dam is Garden Flower's Victoria 279262.

UNION COUNTY NOTES

The price of \$1.50 is bringing about all the wheat to market which was held for better prices. Growing wheat has some rust and small heads which does not promise as big a crop as earlier indications did.

Corn is selling at 60 cents, but there are only a few buyers for it even at that price. Germination of corn in fields is very good, and corn is being cultivated, tho there are still some fields of corn to be planted. While the showers are making a good growth in grass fields, yet one sees very few good clover fields, tho the growth of clover in wheat stubbles last summer was better than usual. The question is, what became of the clover? Can some one explain.

It makes no difference if the stubbles were mowed, pastured or the growth was left to die on the ground.

Since threshers talk of charging the same high rates for threshing as last year, some farmers are thinking of buying outfits of their own.—J. N. Glover.

No More Reason why You Should Milk by Hand than Harvest by Hand

The De Laval Milker

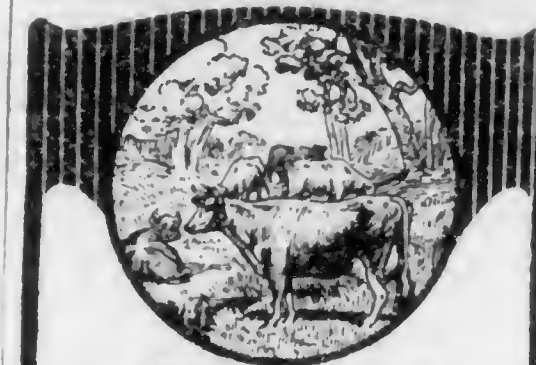
saves more time during a year than a grain binder or any other labor-saving device a dairyman can own. In addition it increases the production of milk, many De Laval users say, to such an extent that the increased flow alone pays for the milker.

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A Milker That Milks without stripping after, without injuring your cows.
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Your Green Mountain Silo, with the popular hip roof, will never need an apology. It is built to stand up permanently—just as any other farm building is expected to do. Every groove and joint is made to fit—both for permanence and silage protection. Every silo is treated in creosote preservative. Hoops are of extra heavy steel with rolled (not cut) threads. They cost us more but they stand unusual strains. Doors fit like a glove—always tight. Wooden ladder runs; no iron to frost the fingers. Green Mountain Anchorage system holds silo absolutely firm and upright. A beautiful silo—with nut-brown side walls and bright red cedar roof. Write today for detailed circular. Special inducements for early orders.
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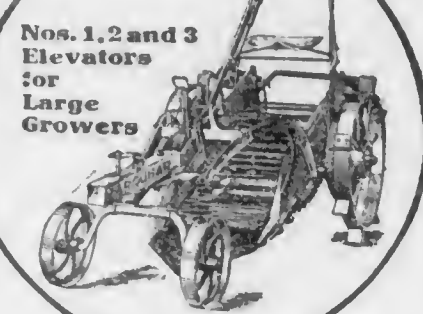
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FALL SET STRAWBERRY PLANTS

"What do you think about setting out a patch of strawberries this fall for the 1922 crop?"

This is a question that comes to me pretty often just in the middle of the strawberry season or soon after. The reason for this is probably the fact that the strawberry is one of the most delicious fruits and during the season for the berries one wants to have his own patch on the farm for another year. Certainly I don't blame anyone for that either.

But fall is not the best time to plant a strawberry bed according to my experience. We have tried many times to replace a variety that showed up as inferior and of course didn't know about it until after the fruiting season was over. Then we destroyed the unfruitful plants and planted a tried-out variety from the bed that had just fruited. But not over 25 per cent of the plants lived and they required extra care to get that amount to pull thru. More than that they were never good healthy plants and the rows didn't fill up with runners.

Now when I want to get plants for an extra variety I don't get them but wait until the next spring. Then I am just as far ahead as I would have been if I had planted the fall before.

One can have considerable success with fall set plants however, if there is plenty of water to use on them in the fall when it usually is so dry. But farmers are seldom equipped with any irrigation and this is not practical. One can also buy potted plants. These are expensive but they usually grow pretty well. They do not equal the spring set plants but are a good substitute. For the farmer's garden they are possible and fairly practical.

A strawberry requires a season to grow in and another to fruit in. One can't get around this. The plants cannot be expected to fruit the first year but all blossoms should be taken off before they mature fruit. This allows the entire plant energy to go to setting plants and producing runners for the following year.

Fall set plants are necessarily taken from vines that have fruited. Their energy has been directed toward producing fruit and not toward vines. This alone is reason for an unsatisfactory stand of plants. But when this is coupled with trying to get a plant to adjust itself to a new soil at a time of the year when nature doesn't figure on adjustments and when there is a shortage of rains to help the plants adapt themselves to the new soil, it is pretty sure to be a failure.

For the farmer who wants a small patch of berries that will produce a part of a crop the first year I would suggest Progressive everbearing plants. This variety is practical on a small scale at least and will mature fruit the first year and keep at it for a long season—sometimes four months where we are located.—E. R., Ohio.

DEFOLIATED CHERRIES

I have several hundred cherry trees (Early Richmond and Montmorency) and the leaves are all yellow as if it were fall. Can you

thru your paper tell me cause and remedy for same. They are about 20 years old and have not been ploughed or cultivated the last 6 years. Last year a good crop—this year full of blossom but got froze out (no cherries).—W. P. P., Burlington Co., New Jersey.

If the varieties involved in this case were sweet instead of sour, we would need only one guess in order to name the trouble. As it is, we may need several guesses, on the basis of the information at hand, and even then we may not hit the exact cause of the trouble.

If the cherries were sweet instead of sour, we would say at once that the trees were affected by the leaf-blight or yellow-leaf disease, which is caused by a fungus now known as *Coccomyces hiemalis*. This disease is very common all over the world, wherever the sweet cherry is grown, and is a real pest, both in nursery and orchard. Under especially favorable conditions for the disease-producing organism, the most susceptible varieties are completely defoliated very early in the summer, thus greatly weakening the tree and reducing its chances of passing thru the winter safely and especially reducing its chances of setting a crop the following year. This defoliation may occur any time after the last of June.

It is possible that this is also the trouble in the present case, but if so, it is doubtless being caused by a very similar organism, known as *Coccomyces lutescens*, which is, however, much less common, but which affects the sour cherry tree chiefly when it does appear. In either case, the disease usually appears on the leaves toward the last of May or early in June. At first the affected leaves show slightly discolored, dark-blue spots on the upper surface.

These spots are not more than an eighth of an inch in diameter, and they may either be scattered over the whole leaf or be confined to a small part of it. Within a week or so, the diseased spot becomes dark-red or reddish-brown in color, after which the spot either drops out leaving a circular hole in the leaf, or the whole leaf turns yellow. The latter development is much the most common in the cherry, while the shot-holing effect is most common in an allied trouble on plums.

The usual methods of control are to get rid of the affected leaves after they drop to the ground—since the disease passes the winter in these leaves—and to protect the developing leaves during the growing season. Raking and burning or plowing under will do much toward accomplishing the former, but neither is 100 per cent efficient. Spraying with lime-sulphur or Bordeaux mixture, 4-4-50, will protect the developing leaves. The applications advised are: (1) when the calyx drops from the fruit; (2) two weeks later; (3) just after the fruit is picked; and (4) three weeks later if needed. The lime-sulphur may be diluted about one part to forty of water and iron sulphate may be added at the rate of about one pound to fifty gallons of spray. The iron sulphate eliminates the possibility of burning the foliage and greatly increases the adhesiveness of the spray, both on the operator and the foliage. Sapsucker dust has also been used

with some success. It is put on in combination with lead arsenate, at the rate of ninety parts of the dust to ten parts of the arsenate.

This yellowing of the foliage may also be caused by other things, among which may be mentioned improper spraying, insufficient moisture supply, disease or injury to the roots or to the collar of the tree. It is impossible at this distance, however, to say from the data at hand just which grower may be able to select the one that fits his case from the names and the description of symptoms given above.—J. P. Stewart.

SOD VS. TILLED ORCHARDS

It is quoted that a sod mulch orchard has many advantages over a tillage orchard; but I've never seen the following point touched upon. Is the injury by codling moth or by the curculio greater in a sod mulch than in a tilled orchard, since insects can readily harbor undisturbed in the sod mulch. I would be glad to see this question discussed in your valuable paper.—F. S., Bucks Co., Pa.

This is a question that frequently arises, but on which there is little, if any, exact data. Theoretically, it should be harder to control the curculio, and possibly also the codling moth, in an untilled orchard than in one that is tilled. In practice, however, we have never been able to see any measurable difference in the insect injury on tilled and untilled blocks of the same orchard, on which the spraying had been the same.

It is also worthy of note in this connection that some of the most famous orchards in the country for high-class fruit, such as the Marshall orchard in Massachusetts, the Lewis orchard in Pennsylvania, and the Hitchings orchard in New York, are all handled without tillage.

This does not mean, however, that tillage should be avoided in an orchard, as in many cases it may be the best treatment to follow, at least occasionally. At the same time, one should not feel that it is the only way to grow first-class fruit, since we have so many cases which indicate the contrary.

Incidentally the insects are unusually busy this year on all kinds of orchards, and the very limited crop available for their attention is going to make it especially difficult to get perfect fruit in any of them. In Southern Pennsylvania, the curculio has done the most damage that is apparent to date, but the redbug has also done something, and the work of the codling moth is still to become evident. It certainly takes nerve to go ahead spraying with the fruit as scattered as it is, but it will have to be done if any good fruit is to be secured at all.—J. P. Stewart.

FOUR "WHYS" OF CULTIVATION

If you have not learned it already, here are four good reasons why cultivation is one of the essential requisites for success in the garden: (1) It destroys the weeds, thus allowing just so much more plant food for the good crops. (2) It produces a mulch and conserves moisture in the ground which will be needed when dry weather comes on. (3) Cultivation allows the air to get into the soil for the propagation of the friendly bacteria. (4) A cultivated garden looks much better and will produce the maximum crop.

Plants for late cabbage may be set about June 20. Allow the same distances as for early cabbages and keep the crop growing. Store any surplus for winter use by burying in the ground.

Boys' Department

Dear Editor—I am 12 years old and live on a farm of 50 acres. We have 4 horses, 2 cows and 5 pigs. S. R. Snyder asked for information for making a kite that will fly. Here is a description of one that I made and it went up real nice. It is 3 feet long and 2 feet wide. The cross strip should be two-thirds as long as the long strip and should be fastened to the long strip one foot from each end when the kite is 3 feet long. The strips should be made of green apple wood. A piece of fishing cord is stretched around the kite. Then the paper is fastened to the strips and string with glue. The paper should be cut large enough so that it could be seamed over the string. Care should be taken that the tail is not too light or too heavy.—Daniel Stauffer, Lancaster Co., Pa.

Dear Editor—I have been reading the boy's page and I am very much interested in what the other boys have to say. I am sorry we don't have more space.

I am 12 years of age, I go to school which is only a very short distance. I am in the fifth grade. I live on a farm of 240 acres which has two sets of buildings on—one a tenant lives in and the other we live in, and all necessary outbuildings, we own a touring car and have a tractor to do our work. We keep six horses, five milk cows; last winter



Scott Palmer, an Indiana Co. Boy's Column Reader

we fed thirty head of steers. We have 20 hogs. I have one of my own which had four pigs last winter, we also have about 200 chickens and some ducks. I have two brothers and two sisters.

I help my father do much work. I plow, harrow and do most any kind of work with three horses. I like to kill mice and rats for they are very destructive pests. — Gelwicks McNair, Adams Co., Pa.

Dear Editor—I am very much interested in the Pennsylvania Farmer, especially the boy's page. I hope it will continue. I have seen two letters published from Bucks County and hope this one will be published, too. I am a boy 12 years of age and just graduated from the eighth grade. Next year I expect to attend high school. I live on a farm of 60 acres. We make a specialty of fruit and poultry. Owing to the late and heavy frost, most of our fruit froze this spring, but our chickens are doing fine.

We have one thousand chicks, five hundred hens, two cows, one calf, ten pigs and three horses. As pets I have eight rabbits, thirty-four chicks and three pairs of pigeons. I have a brother and a sister somewhat older than I am, and one brother younger than I, namely, Victor, Pearl and Walter. I think this is enough for my start. Hurrah for Pennsylvania Farmer.—Paul M. Hoffman, Bucks County, Pa.

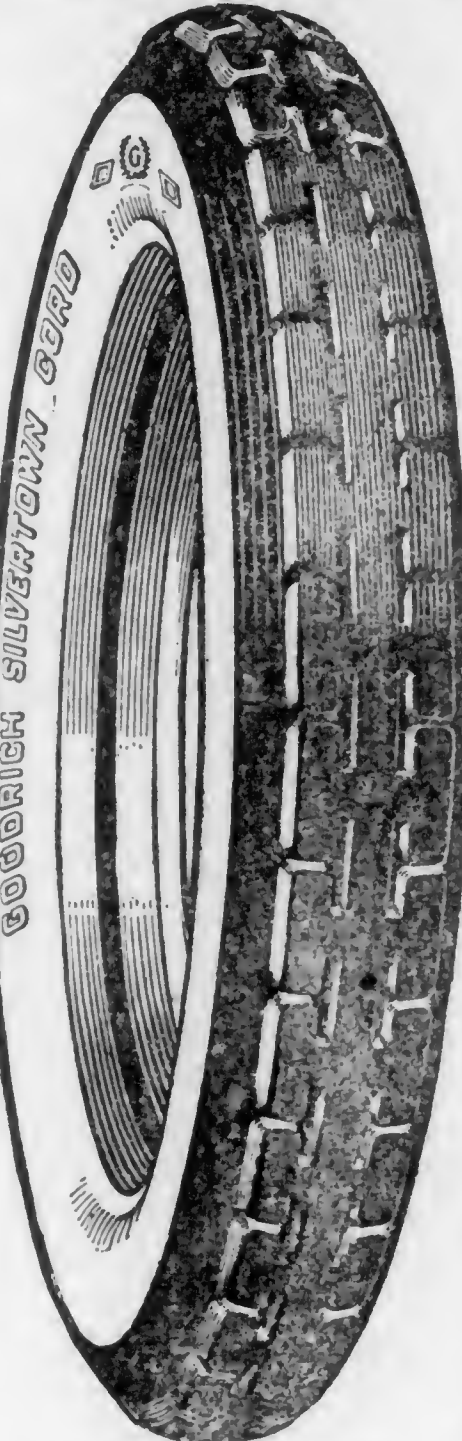
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The Valley of the Giants

By PETER B. KYNE

Synopsis John Cardigan, a middle-aged man—a giant in frame and mind—was a pioneer settler along the Pacific coast in Humboldt County, California, in 1860. His business was cutting the giant trees into lumber. His young wife died and was buried among the redwoods in "The Valley of the Giants," as he called the spot which he loved and preserved as a shrine to her memory. Bryce, Cardigan's only son, was an ultimate dream of his father—who planned that he should inherit the great lumber business which he had built up. Bryce had a brief love affair with Shirley Sumner, a visitor to the neighborhood, but she was soon forgotten. Cardigan tried to buy a tract of timber adjoining his and refused to be bribed into raising his offer for it. He determined to move his mill to the San Hedrin watershed and start logging operations there. Bryce, after four years of college in the East, and two years of travel abroad returned to Sequoia. He was met at the train by George Sea Otter. Bryce developed an interest in a young woman who got off the train with him and found no one to meet her. He learned that she was Shirley Sumner and she accepted his invitation to ride to Sequoia with him. Their arrival home he found that his father had been nearly blind for two years and that he was in danger of losing his redwoods to his competitor, Colonel Pennington.

Chapter VIII

AS HE stepped into the familiar entrance-hall, Bryce paused, raised his head and sniffed suspiciously, like a bird-dog. Mrs. Tully arms akimbo, watched him pleasantly. "I smell something," he declared, and advanced a step down the hall for another sniff; then, in exact imitation of a foxhound, he gave tongue and started for the kitchen. Mrs. Tully, waddling after, found him "pointing" two hot blackberry pies which had but a few minutes previous been taken from the oven. He was baying lugubriously.

"They're wild blackberries, too," Mrs. Tully announced proudly. "I remembered how fond you used to be of wild-blackberry pie—so I phoned up to the logging-camp and had the woods-boss send a man out to pick them."

"I'm still a pie-hound, Mrs. Tully, and you're still the same dear, thoughtful soul. I'm so glad now that I had sense enough to think of you before I turned my footsteps toward the setting sun." He patted her gray head. "Mrs. T." he declared, "I've brought you a nice big collar of Irish lace—bought it in Belfast, b'gosh. It comes down around your neck and buckles right here with an old ivory cameo. I picked up in Burma and which formerly was the property of a Hindu queen."

Mrs. Tully simpered with pleasure and protested that her boy was too kind. "You haven't changed a single speck," she concluded proudly.

"Has the pie?"
"I should say not."
"How many did you make?"
"Two."
"May I have one all for myself, Mrs. Tully?"

"Indeed you may, my dear."
"Thank you, but I do not want it for myself. Mrs. Tully, will you please wrap one of those wonderful pies in a napkin and the instant George Sea Otter comes in with the car, tell him to take the pie over to Colonel Pennington's house and deliver it to Miss Sumner? There's a girl who doubtless thinks she has tasted pie in her day, and I want to prove to her that she hasn't." He selected a card from his card-case, sat down, and wrote:

Dear Miss Sumner:
Here is a priceless hot wild-blackberry pie, especially manufactured in my honor. It is so good I wanted you to have some. In all your life you have never tasted anything like it.
Sincerely,
BRYCE CARDIGAN.

He handed the card to Mrs. Tully and repaired to his old room to remove the stains of travel before joining his father at dinner.

Some twenty minutes later his un-

usual votive offering was delivered by George Sea Otter to Colonel Pennington's Swedish maid, who promptly brought it in to the Colonel and Shirley Sumner, who were even then at dinner in the Colonel's fine burl-redwood-paneled dining room. Miss Sumner's amazement was so profound that for fully a minute she was mute, contenting herself with scrutinizing alternately the pie and the card that accompanied it. Presently she handed the card to her uncle, who affixed his pince-nez and read the epistle with deliberation.

"Isn't this young Cardigan a truly remarkable young man, Shirley?" he declared. "Why, I have never heard of anything like his astounding action. If he had sent you over an armful of American Beauty roses from his father's old-fashioned garden, I could understand it, but an infernal blackberry pie! Good heavens!"

"I told you he was different," she replied. To the Colonel's amazement she did not appear at all amused.

Colonel Pennington poked a fork thru the delicate brown crust. "I wonder if it is really as good as he says it is, Shirley."

"Of course. If it wasn't, he

incurring the risk of having to marry him."

"I repeat that this is most extraordinary."

"Only because it is an unusual thing for a young man to do, although all, why shouldn't he send me a blackberry pie if he thought a blackberry pie would please me more than an armful of roses? Besides, he may send the roses to-morrow."

"Most extraordinary!" the Colonel reiterated.

"What should one expect from such an extraordinary creature? He's an extraordinary fine-looking young man, with an extraordinary scowl, and an extraordinary crinkly smile that is friendly and generous and free from masculine guile. Why, I think he's just the kind of man who would send a girl a blackberry pie."

The Colonel noticed a calm little smile fringing her generous mouth. He wished he could tell, by intuition, what she was thinking about—and what effect a hot wild-blackberry pie was ultimately to have upon the value of his minority holding in the Laguna Grande Lumber Company.

Chapter IX

Not until dinner was finished and father and son had repaired to the library for their coffee and cigars did Bryce Cardigan advert to the subject of his father's business affairs.

"Well, John Cardigan," he declared comfortably, "today is Friday, I'll

Agriculture

In former years, when men essayed Good Mother Earth to tickle. It was not counted as a "trade." To wield the scythe and sickle. To steer a plow and drive a nag. And, with the feet loam-weighted. Plod back and forth behind a "drag."

As "Hopping clouds," was rated. He counted brawn ahead of brain. The doughty son of Labor Who daily toiled thru sun and rain.

As likewise did his neighbor, He blindly fought the worms and flies. Which yearly were alarming. And, tho he took the County prize, His toil was classed as "farming."

But, in these days of modern tools And more progressive seeding, We learn our precepts in the schools.

And thru constructive reading. A good farm paper fills the need. And is a potent factor In raising crops from fertile seed. As much so as the tractor.

Where formerly we cast aside All scientific data. It now affords us joy and pride To raise a smooth potato. So, raising livestock, corn and peas, In spite of pest and vulture, Is a "profession," if you please, And classed as "agriculture."

—Colorado Ag. College News Notes

wouldn't have sent it."

"How do you know?"

"By intuition," she replied. And she cut into the pie and helped the Colonel to a quadrant of it.

"That was a genuine hayseed faux-pas," announced the Colonel a few moments later as Shirley was pouring coffee from a samovar-shaped percolator in the library. "The idea of anybody who has enjoyed the advantages that fellow has, sending a hot blackberry pie to a girl he has just met!"

"Yes, the idea!" she echoed. "I find it rather charming."

"You mean amusing."

"I said 'charming.' Bryce Cardigan is a man with the heart and soul of a boy, and I think it is mighty sweet of him to share his pie with me. If he had sent roses, I should have suspected him of trying to 'rush' me, but the fact that he sent a blackberry pie proves that he's just a natural, simple, sane, original citizen—just the kind of person a girl can have for a dear friend without

spend Saturday and Sunday in sinful sloth and the renewal of old acquaintance, and on Monday I'll sit in at your desk and give you a long-deferred vacation. How about that program, pard?"

"Our affairs are in such shape that they could not possibly be hurt or bettered, no matter who takes charge of them now," Cardigan replied ditherly. "We're about thru. I waited too long and trusted too far; and now—well, in a year we'll be out of business."

"Suppose you start at the beginning and tell me everything right to the end. George Sea Otter informed me that you've been having trouble with this Johnny-come-lately, Colonel Pennington. Is he the man who has us where the hair is short?"

The old man nodded.

"The Squaw Creek timber deal, eh?" Bryce suggested.

Again the old man nodded. "You wrote me all about that," Bryce continued. "You had him blocked whichever way he turned—so effectively blocked, in fact, that the only

pleasure he has derived from his investment since is the knowledge that he owns two thousand acres of timber with the exclusive right to pay taxes on it, walk in it, look at it and admire it—in fact, do everything except log it, mill it, and realize on his investment. It must make him feel like a bally jackass."

"On the other hand," his father reminded him, "no matter what the Colonel's feeling on that score may be, misery loves company. And not until I had pulled out of the Squaw Creek country and started logging in the San Hedrin watershed, did I realize that I had been considerable of a jackass myself."

"Yes," Bryce admitted, "there can be no doubt but that you cut off your nose to spite your face."

There was silence between them for several minutes. Bryce's thoughts harked back to that first season in logging in the San Hedrin, when the cloudburst had caught the river filled with Cardigan logs and whirled them down to the bay, to crush thru the log-boom at tidewater and continue out to the open sea. In his mind's eye he could still see the red ink figures on the profit-and-loss statement. Sinclair, his father's manager, had presented at the end of that year.

The old man appeared to divine the trend of his son's thoughts. "Yes, Bryce, that was a disastrous year," he declared. "The mere loss of the logs was a severe blow, but in addition I had to pay out quite a little money to settle with my customers. I was loaded up with low-priced orders that year, although I didn't expect to make any money. The orders were merely taken to keep the men employed. You understand, Bryce! I had a good crew, the finest in the country; and if I had shut down, my men would have scattered and—well, you know how hard it is to get that kind of a crew together again. Besides, I had never failed my boys before, and I couldn't bear the thought of failing them then. Half the mills in the country were shut down at the time, and there was a lot of distress among the unemployed. I couldn't do it, Bryce."

Bryce nodded. "And when you lost the logs, you couldn't fill those low-priced orders. Then the market commenced to jump and advanced three dollars in three months—"

"Exactly, my son. And my customers began to crowd me to fill those old orders. Praise be, my regular customers knew I wasn't the kind of lumberman who tries to crawl out of filling low-priced orders after the market has gone up. Nevertheless I couldn't expect them to suffer with me; my failure to perform my contracts, while unavoidable, nevertheless would have caused them a severe loss, and when they were forced to buy elsewhere, I paid them the difference between the price they paid my competitors and the price at which they originally placed their orders, with me. And the delay in delivery caused them further loss."

"How much?"
"Nearly a hundred thousand—to settle for losses to my local customers alone. Among my order I had three million feet of clear lumber for shipment to the United Kingdom, and these foreign customers, thinking I was trying to crawlfish on my contracts, sued me and got judgment for actual and exemplary damages for my failure to perform, while the demurrage on the ships they sent to freight the lumber sent me hustling to the bank to borrow money."

He smoked meditatively for a min-

ute. "I've always been land-poor," he explained apologetically. "Never kept much of a reserve working-capital for emergencies, you know. Whenever I had idle money, I put it into timber in the San Hedrin watershed, because I realized that some day the railroad would build in from the south, tap that lumber, and double its value. I've not as yet found reason to doubt the wisdom of my course; but"—he sighed—"the railroad is a long time coming!"

John Cardigan here spoke of a most important factor in the situation. The crying need of the country was a feeder to some transcontinental railroad. By reason of natural barriers, Humboldt County was not easily accessible to the outside world except from the sea, and even this avenue of ingress and egress would be closed for days at a stretch when the harbor bar was on a rampage. With the exception of a strip of level, fertile land, perhaps five miles wide and thirty miles long and contiguous to the seacoast, the heavily timbered mountains to the north, east, and south rendered the building of a railroad that would connect Humboldt County with the outside world a profoundly difficult and expensive task. The Northwestern Pacific, indeed, had been slowly building from San Francisco Bay up thru Marin and Sonoma counties to Willits in Mendocino County. But there it had stuck to await that indefinite day when its finances and the courage of its board of directors should prove equal to the colossal task of continuing the road two hundred miles thru the mountains to Sequoia on Humboldt Bay. For twenty years the Humboldt pioneers had lived in hope of this; but eventually they had died in despair or were in process of doing so.

"Don't worry, Dad. It will come," Bryce assured his father. "It's bound to."

"Yes, but not in my day. And when it comes, a stranger may own your San Hedrin timber and reap the reward of my lifetime of labor."

Again a silence fell between them, broken presently by the old man. "That was a mistake—logging in the San Hedrin," he observed. "I had my lesson that first year, but I didn't heed it. If I had abandoned my camps there, pocketed my pride, paid Colonel Pennington two dollars for his Squaw Creek timber, and rebuilt my old logging-road, I would have been safe today. But I was stubborn; I'd played the game so long, you know—I didn't want to let that man Pennington outgame me. So I tackled the San Hedrin again. We put thirty million feet of logs into the river that year, and when the freshest came, McTavish managed to make a fairly successful drive. But he was all winter on the job, and when spring came and the men went into the woods again, they had to leave nearly a million feet of heavy butt logs permanently stranded in the slack water along the banks, while perhaps another million feet of lighter logs had been lifted out of the channel by the overflow and left high and dry when the water receded. There they were, Bryce, scattered up and down the river, far from the cables and logging-donkeys, the only power we could use to get those monsters back into the river again, and I was forced to decide whether they should be abandoned or split during the summer into railroad ties, posts, pickets, and shakes—commodities for which there was very little call at the time and in which, even when sold, there could be no profit after deducting the cost of the twenty-mile wagon

haul to Sequoia, and the water freight from Sequoia to market. So I abandoned them."

"I remember that phase of it, partner."

"To log it the third year only meant that more of those heavy logs would jam and spell more loss. Besides, there was always danger of another cloudburst which would put me out of business completely, and I couldn't afford the risk."

"That was the time you should have offered Colonel Pennington a handsome profit on his Squaw Creek timber, pal."

"If my hindsight was as good as my foresight, and I had my eyesight, I wouldn't be in this dilemma at all," the old man retorted briskly. "It's hard to teach an old dog new tricks, and besides, I was obsessed with the need of protecting your heritage from attack in any direction."

John Cardigan straightened up in his chair and laid the tip of his right index finger in the center of the palm of his left hand. "Here was the situation, Bryce: The center of my palm represents Sequoia; the end of my fingers represents the San Hedrin timber twenty miles south. Now, if the railroad built in from Grant's Pass, Oregon, on the north from the base of my hand, the terminus of the line would be Sequoia, twenty miles from your timber in the San Hedrin watershed!"

Bryce nodded. "In which event," he replied, "we would be in much the same position with our San Hedrin timber as Colonel Pennington is with his Squaw Creek timber. We would have the comforting knowledge that we owned it and paid taxes on it but couldn't do a darned thing with it!"

"Right you are! The thing to do, then, as I viewed the situation, Bryce, was to acquire a body of timber north of Sequoia and be prepared for either eventuality. And this I did."

Silence again descended upon them; and Bryce, gazing into the open fireplace, recalled an event in that period of his father's activities. Old Bill Henderson had come up to their house to dinner one night, and quite suddenly, in the midst of his soup, the old fox had glared across at his host and bellowed:

"John, I hear you've bought six thousand acres up in Township Nine."

John Cardigan had merely nodded, and Henderson had continued: "Going to log it or hold it for investment?"

"It was a good buy," Cardigan had replied enigmatically; "so I thought I'd better take it at the price. I suppose Bryce will log it some day."

"Then I wish Bryce wasn't such a boy, John. See here, now, neighbor, I'll 'fess up. I took that money Pennington gave me for my Squaw Creek timber and put it back into redwood in Township Nine, slambang up against your holdings there, John. I'd build a mill on tidewater if you'd sell me a share, and I'd log my timber if—"

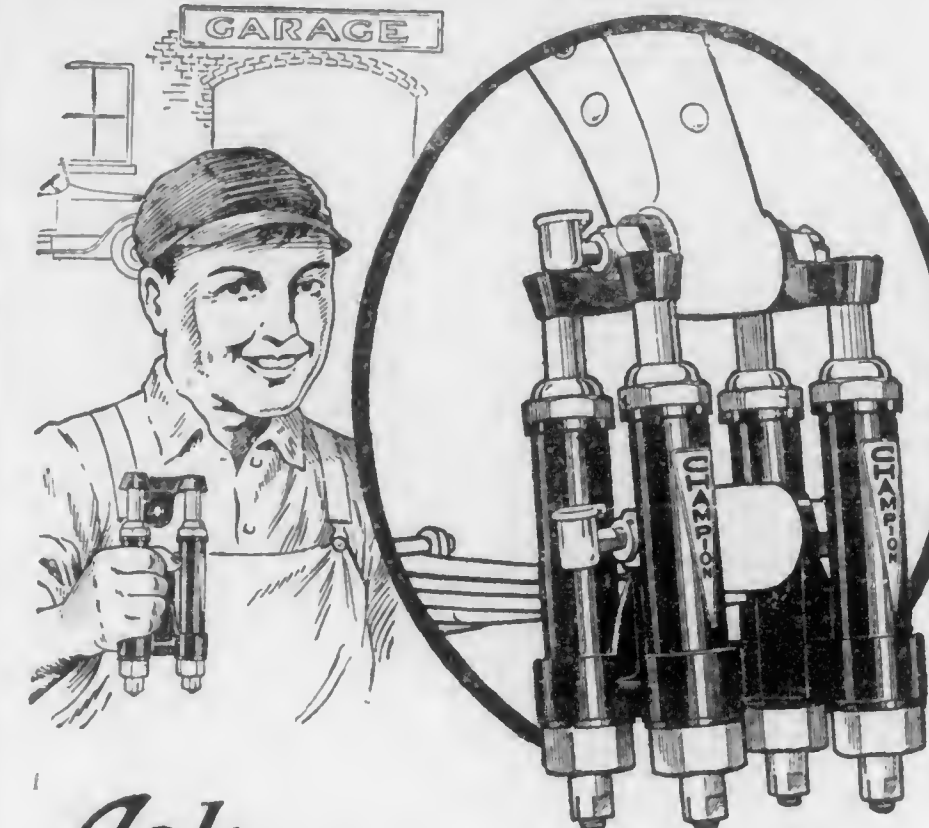
"I'll sell you a mill-site, Bill, and I won't stab you to the heart, either. Consider that settled."

"That's bully, John; but still, you only dispose of part of my troubles. There's twelve miles of logging-road to build to get my logs to the mill, and I haven't enough ready money to make the grade. Better throw it with me, John, and we'll build the road and operate it four our joint interest."

(Continued Next Week.)

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PHILADELPHIA, PA., SATURDAY, JUNE 25, 1921

Number 26



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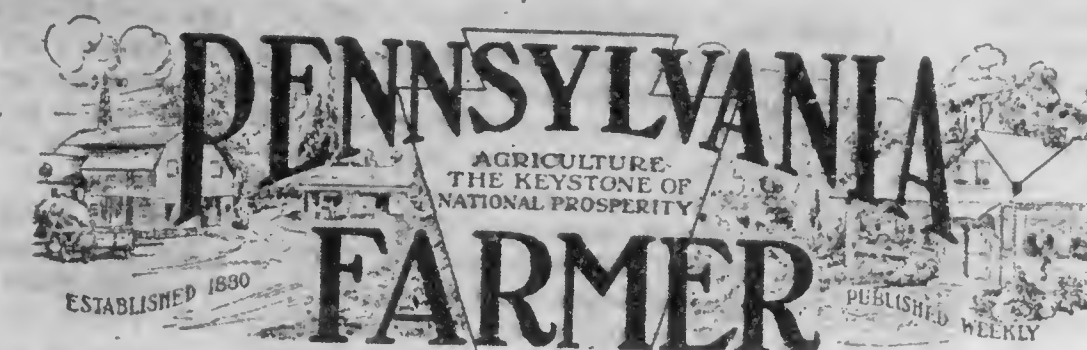
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Volume 49

PHILADELPHIA, PA., SATURDAY, JUNE 25, 1921

Number 26

Motor Trucks to the Rescue of Growers

How Modern Transportation Methods Helped Bustleton, Pa., Gardeners

By THOS. H. WITTKORN

A MOTOR TRUCK on practically every farm and few farm horses with shoes on, may seem rather idealistic but it is the actual condition existing around Bustleton, Pennsylvania, the big market gardening section of Philadelphia. "We'd quit the business if we had to go back to horses to do the hauling," is the universal answer of the farmers in that section as to how trucks compare with horses. A trucker's wagon on the road is indeed a rare sight because even the small growers who cannot afford trucks of their own, ship by their neighbor's or a custom truck.

The farming methods around Bustleton have been completely changed since the coming of motor trucks. It was only a few years back when this district was strictly a grain section. It is ten to fifteen miles from the wholesale produce markets and there was plenty of room then for the city truckers in the "neck" and Richmond sections of Philadelphia which were only a couple of miles from the markets. Building operations, however, gradually crowded the truckers out of these places so today a large part of the city's truck crops are grown farther away from its center than they could be if horses had to be depended on to do the marketing.

Not only have motor trucks been the salvation of the truckers crowded out of the city but they have enabled lots of good food from farms still beyond the recognized trucking sections to get to market. Farmers at these farthest outposts are now able to heed the call of a big city for something fresh to eat and while they start with a few easily grown crops they will eventually become real truckers as the city grows. Even now most of the land around Bustleton is valued at \$1000 an acre and the men do not hesitate to sell and move farther out when the opportunity presents itself since they have trucks to eliminate distance for them.

Some interesting figures concerning these conditions in Philadelphia County were recently published by L. H. Wible, the statistician of the Pennsylvania Department of Agriculture. He found that on January 1, 1921, there were 355 automobiles and 282 motor trucks on the farms of that county. It is, of course, nothing to brag about when you think of the cars and trucks in some of the strictly agricultural counties, but it is full of meaning when you consider the limited farming area and the almost equal number of pleasure and business machines. Indeed it is the only county in the state where the figures show any such relation. In Lancaster County, for instance, noted as a banner farming section, there are 20 automobiles for every motor truck—Mr. Wible will tell you there are 7,914 cars and 385 trucks. In York County the relation is 10 to 1 and in Chester County 7 to 1 while the average for the whole state is nearly 8 to 1. Remember this does not count the machines in the cities but on the 202,298 farms,

which we have according to the 1920 census. It was these figures which recently caused me to spend two days visiting a number of farmers around Bustleton and what I found out is recorded in this little tale. I was able to hear of only four farms of any importance which did not have a motor truck. Practically every make and size I ever heard of were represented but those rated two and two and a half tons capacity seemed to meet all the requirements best.

Truck Shortens Trip to Market

The fine improved roads of Philadelphia County leading right from the farms to the city markets, have undoubtedly helped the change from horse to gas vehicles but there were other vital factors also. In order to get the most work out of every man on the farm, especially of late years

to waste taking them to the shop," he added, and he ought to know because he is one of the successful men in the Bustleton district. His complete overhead sprinkler system was installed when other folks around him were buying automobiles with their surplus cash. Now he has both and many other modern improvements which make life worth living on the farm and keep the boys and girls at home. His two-ton truck was purchased in 1917 and is still giving excellent service. It is nothing unusual for it to haul 150 five-eighth baskets full of produce twelve miles to market and be back in anywhere from two to four hours time. It takes about four gallons of gasoline to make the round trip and the driver returns in fit shape to do a good day's work on the farm.

It is surprising how hard the hoofs of the farm horses get when they are left without shoes for a long time. The horses are able this way to do all the ordinary work on the farms. How general the practice is may be grasped from the absence of a horseshoer in the village whereas only a short time ago there were three shops and they were busy nearly all the time.

Handle Large Loads

Corwin Starkey is another farmer who is enthusiastic about the good service he has had from his truck. In 1915 he bought one rated to carry 4500 pounds and although he told me his usual load is 5000 and often 5500 pounds he is still using the same rear tires which came on the machine. It has carried many loads from his hundred acre farm during these years but has been in a service station only for new brake bands and a leaky radiator. Mr. Starkey is careful, however, where and how he drives and keeps the little things attended to before they become serious. One of the greatest advantages he finds in hauling by truck is the quickness with which he can market his sugar corn. This is one crop which soon loses its "quality" when a lot of it is piled together and given a long trip to market. Every grower knows how quickly it will heat and lose all its sweetness. With the truck Mr. Starkey can get his corn to the commission man two hours after it is picked, whereas it used to take him from five to eight hours under the old system. His salad and spinach, two other perishable crops, also reach market in better shape and bring better prices accordingly.

Another man I visited who could not say enough for his truck was Howard N. Dudley. He has run his more than 15,000 miles and never had the crankcase down. He does not spare it either when it comes to putting on big loads but is careful how he or his son drives it. He puts on four tons of manure when he hauls from the car to his farm although the truck is rated to carry only two and a half tons, but then he has an ideal road to travel over.

All the men I visited had the right idea about



A Truck Provides Rapid and Easy Transportation

care in driving their trucks but possibly did not express it as concisely as one of the big tire manufacturers who advertises "Motor trucks are seldom worn out, they are usually pounded to pieces." But even with the best of tires a truck will have a short life if it is loaded to the limit and then snatched, jerked and generally ill-treated irrespective of the condition of the road. When the owner drives his truck he is careful with it and you can tell from the cases cited that it is nothing unusual to find growers who have used their trucks from three to six years and are still getting satisfactory service.

The ability of motor trucks to make more than one trip a day, irrespective of ordinary weather conditions, and always be loaded to capacity, helps wonderfully when the rush season comes. Being able to bring back to the farm without fatigue, just as big a load as they take away settles the big problem of hauling stable manure to the soil. Yes, truckers with motor trucks are always assured of a plentiful supply of fertility. Those who must haul manure from the railroad cars are at the mercy of railroad uncertainties and unscrupulous dealers but the men with trucks go right to the city stables and haul the manure direct to their fields.

Various arrangements are made with stable owners for the manure and a common way is to load all that can be put on a two-ton truck and pay seventy-five cents for it. This may seem like stealing it but in the city it costs money to get rid of it and when it brings in something the owner is pleased. Some farmers make a yearly contract with stablemen for all the manure they will have, while still others buy from a city dealer who makes contracts with several stable owners but does not handle the manure, he merely sells the right to haul it away.

The people in the village of Bustleton are especially pleased with this plan of hauling direct from the city because it was only a few years ago that they were up in arms against the farmers regarding manure. That was when there used to be from 25 to 30 carloads at one time on the railroad siding in the center of the town and the people objected because of the odors and the flies. Then there was an almost endless procession of farm wagons hauling it away and it is little wonder that the people threatened to have the Board of Health do something to have conditions changed.

The photograph shows a typical load of manure hauled direct from a city stable to the field. George Biddle, the trucker in this case, makes three trips a week for manure and brings from three to four tons in each load depending on how much is at the stable. He makes the trip with the motor truck and two men in three hours whereas it formerly required four horses and six hours time. Mr. Biddle not only saves this time of men and horses but gets a better grade of manure. He is especially pleased with this work of his truck and could not speak too highly of it. He told me that when he used to haul from the railroad he would get, in nearly every carload, from a half to a ton of old bricks, cinders or soft coal besides old wire, broken glass and oil sweepings from the streets. He not only had to pay for all this foreign material but it gave him more work, littered up his farm and increased the possibility of accidents to the men and animals.

On none of the farms which I visited did I notice that a garage had been built especially to keep the truck. Every farm, of course, had a well appointed packing house and the common plan was to give the truck garage space in connection with it. Concrete floors were much in evidence and provision had been made for heating the packing houses in cold weather.

Convenient Packing House Saves Labor

The garage arrangement made by one grower was especially noteworthy and could be copied easily by other truckers or in fact by anyone having a lot of loading to do. In this case the building was possibly 40 feet square, and it served as garage, packing house, implement shed and storage room for empty baskets, boxes, etc. Half of it, that is a space approximately 40 by 20 feet, was for the packing house with a stove, wash-tubs, tables, etc., while the other half was divided in half again. The front half of this side was used for storing farm implements of various kinds while the truck was kept in the rear. As there was no partition between the garage and the packing house the tall board of the truck backed right up to the side of the packing room. In order then, to make it easy loading, the floor of the garage had been dug on a slant to the rear so that the floor of the truck was on a level with the floor of the packing house. It required no

er so that the trucks were generally given good care. and if he loses his job he can get another, at least he could until recently. It is no wonder then that it costs a lot of money to keep the average city truck going, but it does not of necessity follow that the costs per mile of service are the same for the farm truck. Even if the owner is not going to drive it himself the average farm hired man is used to handling machinery, caring for his team, etc., and when he changes to a truck he has a better appreciation of the value of a little good treatment than a man who has always had little interest except to get his pay envelope when Saturday night comes. When a farmer drives his own truck, conditions are just about ideal for long service at a low cost. Any garage man will tell you it is the little things neglected which make the big bills, so when a man all his life has been thinking about the comfort of his horses and the care of his wagon it just naturally follows he will be considerate of his motor truck and get excellent results from it. The men around Bustleton have proved this for themselves but if you want more proof there surely must be examples near at home which you can visit.



George Biddle and Sons of Bustleton Haul Manure From City Stables Direct to Field. This is a Four Ton Load

lifting then to load boxes, barrels, etc., but they could be easily put in with the small two-wheeled hand trucks, such as are commonly used for handling freight. The floor of the garage was concrete and they told me that the truck had no difficulty in starting the load up the incline.

The city commission men are pleased with the new marketing by motor truck methods as the goods get to them earlier, in better shape and they can arrange their stock before the buyers start coming around midnight. As one farmer pointed out to me the commission man can now move his lettuce crop, or salad as it is commonly called, all the way to Atlantic City quicker than he used to be able to get it from the farm to the commission man. With the aid of the telephone, too, the growers are able to take advantage of any favorable market conditions which may arise. Without a motor truck they would not be able to do this as the horse drawn wagons were limited to one trip a day—that is from 24 to 30 miles.

My whole tale seems to prove that it does not do for farmers to be scared away from motor trucks just because some city business men, who have to depend solely on hired help, may have had some trouble with them. The average city truck driver (that is the man hired for that purpose) seems to care little about operating costs and maintenance charges of the truck he is driving. He knows the owner has to pay the bills

CHANGED TYPES OF FARMING

The character of the farming industry, in Central New Jersey has completely changed during the past thirty-five years. Especially is this the case in Monmouth County. Where our farmers formerly practiced diversified farming, livestock raising and grain growing, they have become gardeners, with the Irish potato their specialty. Fences have disappeared and with them have gone the sheep, the colts, and the cow. Even the small door yard apple orchard is following in the wake of the fences. Farmers keep one or two cows, but many have neither cow nor pig.

Thirty-five years ago the sandy loam farm was out of favor. It is no longer grass land; hence would not mow or pasture heavily. We were looking then to buy a heavier soil, one more adapted to the growing of grass and wheat. Underdrains were small, objections. Labor was plentiful and cheap. Even should drains require re-laying, the expense counted little.

The same law applies when one considers that it takes a team and extra man to work every 100 acres of the heavy type of soil. It, too, requires a more elaborate system of underdrains to raise potatoes than for grain or grass. After all, the potato crop is almost invariably better on the light land.

All this was recently brought more forcibly to my attention when a farm that had always been called one of the best in the township, was thrown on the market. It contained 190 acres. One hundred and twenty is a fine sassafras loam, the balance a heavy clay, needing more underdrains, but capable of raising good crops of hay and grain. The owner of an adjoining farm, a man who had made his money from the potato crop, offered \$24,000 for the 120 acres. The balance he did not want at any price, claiming the ever-increasing taxes, the high cost of labor and underdraining materials, would make it a non-paying proposition.

One of Monmouth's finest farms, containing 160 acres was sold a little more than a year ago to a progressive young farmer. The writer recently visited the place. Cross fences have been removed and the whole farm thrown in one field. This is one instance among many. When one goes along our roads and sees a farm cut by fences into many fields, he knows it belongs to some elderly person. It is a relic of a past generation. Time makes changes necessary in everything—

Thos. A. Smith, Monmouth Co., N. J.



A Good Machine Makes Mowing a Pleasure

The Cost Factor in Potato Production

Larger Yields Usually Mean Lower Production Cost Per Bushel

By Dr. J. G. LIPMAN
Director New Jersey Experiment Station

IN ROUND FIGURES, the world's potato acreage is 40 millions of acres, and that of the United States four million acres. It might be expected that with 10 per cent of the world's acreage we should be producing the same proportion of the total crop, but this is not the case. In the period 1908 to 1915 the world's production fell under the 5 billion bushel mark but once, and it came within hailing distance of the 6 billion bushel mark twice, namely, with 5,872,953,000 bushels in 1912 and 5,802,910,000 bushels in 1913. Our own production was 420 millions of bushels in 1912 and 331 millions of bushels in 1913. In 1917 we had a large acreage, about 4,400,000 acres, and grew a record crop, about 442,000,000 bushels, but the average acre yield in that favorable season was a little less than 101 bushels. On about 4,000,000 acres in 1919 we produced only about 358,000,000 bushels, or but little more than \$9 bushels per acre. We had another favorable season in 1920 when we grew about 430,000,000 bushels, but still fell short of the average acre yield in the European countries. The figures just given are of considerable interest, since they naturally lead to questions that concern not only acre yields but also the factors that determine acre yields and the influence of these on the cost of production.

Quite recently the Office of Farm Management and Farm Economics of the United States Department of Agriculture issued a preliminary report on labor and material requirements in the production of potatoes. This report includes 461 records collected in 1920 in nine important potato growing areas in Minnesota, Wisconsin, Michigan, New York and Maine. Table I summarizes this report and represents the cost of each item as a percentage of the total cost of production in two counties in Michigan, two in New York and one in Maine.

It will be observed that by far the most important item of expense is labor, and that man labor represents a larger outlay than horse labor. The cost of the two represents nearly one-half of the entire cost of growing the crop. However, this is not true of Aroostook County, Maine, where the outlay for fertilizer is so large as to represent 35.8 per cent of the total cost of growing the crop. The growers in Wisconsin and Michigan use fairly large quantities of manure and scarcely any fertilizer. In Maine, on the other hand, relatively little is spent on manure, for the organic matter is furnished largely by the sods and the plant food by the fertilizer.

The cost of labor and materials was higher in 1920 than it was in 1919. On the basis of the information obtained in 1919 and using the higher values of 1920 the costs shown in Table II are given, by way of example, for Waupaca County, Wisconsin.

The figures given gain in interest when compared with similar data obtained by Allen G. Waller, of the New Jersey Experiment Station, in Monmouth County, New Jersey. Comparisons are made in Table III of the costs for 1919 and 1921. They include all of the important items of labor and materials, as well as the less important items.

The principal changes in cost are the following: Seed is about 45 per cent cheaper than in 1920 and 20 per cent cheaper than in 1919. Fertilizer cost, on the average, about one-sixth less than in 1919 and 1920, altho some of the growers saved much more than this by buying the in-

gredients and doing their own mixing. The decrease in the cost of spray materials was about 25 per cent, of man labor about 33 per cent, and of horse labor about 15 per cent. The total decrease is therefore estimated at 14 per cent on the basis of the 1919 figures and at 23 per cent

200 bushels per acre. On the basis of averages the growers in this county, one of the best potato regions in the United States, cannot expect to produce potatoes for less than 65-70 cents per bushel. It is also evident that the best growers, those who can consistently produce 300 bushels or more per acre, are able to show much lower costs per bushel. Hence, the factors that make for higher yields, such as the intelligent and liberal use of fertilizers, green manures, insecticides and fungicides, good seed, careful tillage, etc., should be studied just as carefully as the more efficient use of labor and materials in order to reduce production costs.

PENNSYLVANIA 44 WHEAT

The Pennsylvania Agricultural Experiment Station is multiplying and distributing a promising new variety of wheat. It originated with one of a large number of heads selected from a field of Fulcaster in 1909. In 1913 enough seed was grown for a one-sixtieth acre plot, and since 1913 it has been grown in a one-thirtieth acre plot each year in a variety test and also in increase plots. For some years it has been sold to farmers for trial, at first in peck lots and then in two-bushel or larger lots. This year there is being grown on the Experiment Station farms and by farmers of the state approximately 1000 acres, most of which is almost free from mixture. Prior to 1920 it was known by its selection number 44-09, but it is now named Pennsylvania 44.

This wheat belongs to the Fulcaster group which includes besides Fulcaster, Dietz Longberry, and Miracle (also known as Marvelous and Bushel Wheat). Like these it is bearded, has white chaff, and purple straw, and a rather long, red, medium hard berry. It differs from Fulcaster in being two or three inches taller and about two days later. It is also stiffer in the straw.

Below are given the average yields of Pennsylvania 44 and the seven commercial varieties leading in yield at the Pennsylvania Experiment Station for the seven years 1914-20.

Year	Pennsylvania 44	Dawson's Golden Chaff	Harvest King	China	Currell's Prolific	Beechwood Hybrid	Red Wave
1914	35.3 bu.	31.8 bu.	31.4 bu.	30.6 bu.	30.3 bu.	30.2 bu.	29.9 bu.

In 1918-19 there were eight reliable tests conducted by farmers in which Pennsylvania 44 was compared with other varieties, each one a one-acre plot; and in 1919-20 there were twelve such trials. These yields secured are given below.

Average yields per acre secured in farmer's tests:

Year	1919	1920
Pennsylvania 44	28.7 bu.	27.0 bu.
Other varieties	23.9 bu.	20.8 bu.

Difference 4.8 bu. 6.2 bu. It is very important to determine the milling and baking qualities of any new variety of wheat. This new wheat has been milled and tested by Prof. B. W. Dedrick, in charge of milling engineering at the Pennsylvania State College, and his students in comparison with other varieties. The baking tests indicate that in bread making qualities Pennsylvania 44 is practically like Fulcaster which is the standard milling wheat for Pennsylvania.

They are never alone who are accompanied by noble thoughts.—Sir Philip Sidney.

TABLE I
Distribution of Operating Expenses and of Total Cost in Potato Production, 1919 Values. (Percentage basis).

	Michigan	Grand	New York	Maine	Aroostook
	Co.	Co.	Co.	Co.	Co.
Man labor	28.1	30.3	27.3	23.4	19.4
Horse labor	20.4	17.4	24.7	23.8	12.0
Manure	15.8	13.2	11.5	12.7	2.1
Fertilizer	.1	—	1.9	1.4	35.8
Seed	9.1	13.3	11.7	11.9	9.9
Land rent	8.9	7.9	5.0	9.9	5.0
Other expenses	17.6	17.9	17.9	16.9	15.8
Total	100	100	100	100	100

TABLE II
Potato Growing Costs in Waupaca County, Michigan, Based on 1920 Values.

Items	Amounts	Rates	Cost per Acre	Cost per Bushel
Man Labor	77.4 hours	\$.40	\$30.96	\$.25
Horse labor	77.2 hours	.20	15.44	.13
Manure	12.7 tons	2.00	25.40	.21
Fertilizer	—	—	—	—
Seed	10.6 bu.	3.75	39.75	.32
82.3% of operating expenses	—	—	\$111.55	\$.91
100.0% of operating expenses	—	—	135.54	1.11
Use of land charge, 6% of \$161	—	—	9.66	.07
Total cost	—	—	\$145.20	\$ 1.18
Yield per acre, 123 bushels.	—	—	—	—

TABLE III

Cost of Potato Production, Monmouth County, New Jersey	1919.	1921.
Seed	\$27.76	\$22.50
Cover crop	3.37	4.00
Baskets, barrels, bags	1.01	1.01
Seed treatment	.03	.03
Fertilizer	59.07	49.22
Lime	—	—
Spray	4.11	3.00
Manure	.34	.34
Operator's labor	13.65	—
Hired labor	25.83	29.10
Horse labor	18.33	15.58
Machine labor	8.01	10.00
Tractor labor	.83	1.50
Truck labor	1.03	1.50
Land rental	19.18	19.18
Insurance	.61	.61
Interest	2.74	2.36
Total cost per acre	\$185.90	\$159.93

on the basis of the 1920 figures. Now, assuming a yield of 200 bushels per acre, the cost per bushel would be 80 cents. With a yield of 250 bushels per acre the cost would be 64 cents; and with a yield of 300 bushels per acre it would be 53 cents per bushel. There are many growers in Monmouth County who obtain 300 bushel yields nearly year after year. The average is, however, about 200 bushels per acre, which means that a large number of growers produce less than

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HORTICULTURE

A Fine Young Orchard

By J. P. STEWART

ABOUT eight or nine years ago, the writer was called upon to assist a young Pennsylvanian in the selection of either an orchard or an orchard site, on which he could satisfy his desire for an outdoor occupation. He had trained himself for the engineering profession but he found that work too confining. His search took him over some four states and thru a lot of good orchard country. He also secured quite a big list of "available."

After going over the entire list, however, and also going to see several of the most promising places, we came to the conclusion that none of the orchards already planted were just what was wanted, and that if he could stand the expense and delay in returns, the best ultimate success would be secured by selecting a first-class site and starting an orchard of his own. This was done—the selection being made in a state immediately south of Pennsylvania. The farm selected was near a thriving, moderate-sized city, on a hard road, with good local elevation, and its soil was of red shale derivation altho it was largely surrounded by limestone soils. It also needed a lot of cleaning up.

The young chap took the place and dug into the job. We heard comparatively little from him for some years, except in the way of occasional requests for suggestions as to varieties and cultural practices. In the last few years, however, we have been noticing some of his fruit on the principal markets, where he has little trouble in topping the market, and no trouble at all in finding plenty of buyers, regardless of the amount of other fruit offered.

We were also pleased to hear from him recently to the effect that in spite of the unprecedented freezes this spring after the blossoms were out, he is again going to have a very nice crop of peaches. The relative resistance to frost of some of his varieties may be of interest. His J. H. Hale peaches are loaded with fruit and will have to be thinned. His Greensboro, Carman, Ray, and Georgia Belle, all have nice crops; Elberta and Fox fair crops; and Iron Mountain, Smoek and Salway very light. The Hale has always done well on his place, and has sold exceptionally well.

His apples in the same orchard are practically all gone—showing again the general fact that the peach at a given stage of blossom development is much more resistant to freezing than the apple at the same stage. Of his apple varieties, the Winter Banana stood the cold best and at one time looked as if they would carry a nice crop, but they have since largely dropped off. Next to them the Grimes has the most fruit, while the Stayman Winesaps are very scarce. In our own orchard the Staymans stood the freeze considerably better than the York Imperials, which were not nearly so far advanced at the time, and in general the Old Winesap has usually proved to be rather resistant to freezing.

Our orchard friend in the neighboring state also informs us that he

but there will be a few peaches.—E. C. B., Dauphin County, Pa.

I would not be afraid of winter injury from nitrate of soda applied as late as the first of July on peaches or apples. Some of the slower acting materials might result in too late a succulent growth, but I have applied nitrate as late as the last of July on both peaches and apples without any sign of winter injury following, and with good results on the crop of the following year. With the apparently ample growth that the present trees are making, however, it might be well to try the proposed application out on a few typical trees for at least one year before extending it over the entire orchard, as it may not be needed in this particular orchard yet.

August is as good a month as any in which to remove suckers or watersprouts in apples, as they are probably less likely to return after such removal than at any other time.

I doubt whether it would pay one to make any special application for aphids after the second codling spray, at the latest, and I would not consider any spray after the first codling or calyx spray to be of certain value in controlling this insect. They become too well established in the curled leaves to be hit successfully after this calyx spray, so that one usually will have to depend on the natural habits or the natural enemies of these aphids to clear his trees after the time indicated.—J. P. S.

BUTTERFLY THE PEST

The production of cabbage is very largely dependent upon the control of the white butterfly, for it is the larvae of this insect that so very often destroys the entire crop of cabbage. It is the cabbage worm, a medium sized velvety green worm, which is often quite hard to see on the leaves of the young plant.

The control measures are simple and very effective if they are persistently carried out. One very simple means is to go over the plants every few days while they are small and literally kill the worms. The use of poison dust is recommended for the surest means of control of the worm for they are very hard to see. This dust is applied every ten days unless washed off by a rain. When it is necessary to make another application of the dust.

Paris Green Kills Them

An excellent dust for this purpose can be made by mixing one tablespoonful of Paris green with one quart of flour or by mixing two tablespoonfuls of lead arsenate with the same amount of flour. Hydrated lime may be used as a carrier instead of the flour.

Either of the dusts is applied to the cabbage plant when the leaves are dry. For the best success in the control of this pest one should commence on the early broods so that there will not be so many to combat when the cabbage gets into the head, for then the worm burrows into the head and cannot be well reached by the poison.

At one time it was thought that the poison should not be applied after the head was from a half to two thirds grown but it has been found that it can be applied safely clear up to the time of maturity without any danger to the consumer.

Have you named your farm and placed the sign up over the gate? That's one of the best ways of creating a reputation for your produce.



NATIONAL HOLSTEIN MEETING

The second annual sale of the National Holstein Breeders' Association and its annual business meeting recently held in Syracuse, N. Y., were the biggest events of the kind ever held in that state. Both were very liberally attended by both men and women interested in Holsteins from all parts of the United States.

Breeders from the Empire State in particular flocked by the hundreds to the New York State Fair Grounds where the splendid exhibit of cattle was to be seen all the week and a study of their points and of their records was of great inspiration. The spirit of give and take in dairy experience was pronounced. Such an event is of great value in extending and strengthening the industry. All breeders will congratulate Kansas City, Kansas, on securing the meeting for next year, as it will be a great boost to the industry in the weaker sections of the west.

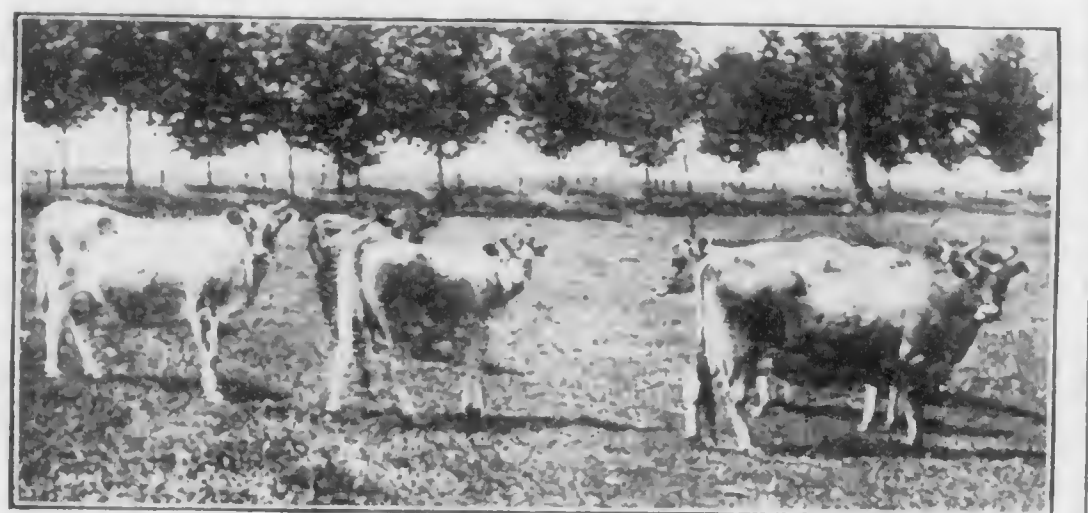
The business meeting set several precedents, one being the heated debate on matters of policy, following the efforts of an unexpectedly power-

ful and the three-day sale had to be crowded into two very full long days of selling.

Transfer fees were reduced from \$1 to 50 cents, and the matter of districting the entire country was left to a committee to consider and report upon. The Cabana-Cole case called for bitter denunciation from association members, who upheld the organization's right to cleanse its own records and keep them clean.

The appeals taken on technicalities were denounced by the counsel for the association. O. U. Kellogg, a breeder of Cortland, N. Y., who said 10 to 12 Supreme Court judges upheld the association in its claim to the right to rule on the case. He would have the fraudulent test removed from the records and have done with the three-year-old controversy that has cast so much discredit on breeders in general. No definite action was taken but perhaps the new officials will be able to clear this thing up in the way honor demands.

The sale was a disappointment to some owners of the highest class animals, which were said to have gone at a sacrifice. Canadian breeders



"Look Right at the Lens," said the Camera Man, and Here You See Betsy of Crystal Spring (right) and Jolly Little Lady (center) Obeying Orders. These are two New Jersey Prize Winners owned by Mr. Forrest F. Dryden, of Stronghold Farm, New Jersey.

ful insurgent element which by means of proxy votes prepared for in advance was able to rule on most of the matters discussed. They demanded methods of economy and more attention to the breed and less to breeders' interests, and in the long run the changes they were able to institute or to pave the way for may prove of value. The conservatives, however, maintained that it was no time to cut off the gas when the machine was going up hill thru sand.

Governor Frank O. Lowden of Illinois, was elected to head the association for the coming year, and George A. Stephenson, of Scranton, Pa., as vice president. F. L. Hough, secretary, and M. H. Gardener, superintendent of advanced registry, were re-elected unanimously, but the directors have reduced their salaries \$1500 a year. The other official salaries may be reduced heavily later by the directors, several of whom are new men and men of policies differing from those in effect in recent months.

President Aitken was re-elected by a big majority of the personal votes cast, but as 2000 proxies had not been counted he declined to accept the office on a technicality and declared Governor Lowden elected. Debate on matters of importance to breeders occupied one whole day more than the meeting was planned

also fared badly, as their express charges and the duty were so high. One man paid \$1400 to get his stock transported to the sale. But in general breeders were satisfied with prices realized. The 171 cattle sold brought \$138,000 or an average price of \$807 each. Animals from New York herds brought the top prices of the sales, the several other notable animals from distant states sold remarkably well.

George Abbott of Cortland, N. Y., sold the top price cow. Arcady Segis Atia, 2nd, 7 years old, to O. M. Montgomery of Spartansburg, S. C., for \$4250. The purchaser recently bought a world's record cow developed by Mr. Abbott for \$7000. Mr. Abbott sold the biggest animal of the sale, a 2750-lb. bull, who is a five-year-old brother of the great bull, Carnation King Sylvia, who sold for \$106,000. W. H. Mace, another Cortland breeder, sold the second highest priced female, Bonalevo Quality Parthena, with a 36-pound record for \$3700 to Wheatland Farm, La Salle. She was the second highest record cow, but sold for \$800 more than the highest record cow. The latter was Pabst Cynthia, having a 33.31 pounds, seven-day butter record at 6 years of age. She was consigned by Bell Farm of Pennsylvania, and went to Jacob Todd of New Jersey. The latter was one of heavy buyers.—Dairy Farmer.

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Of Interest to Farm Women and Girls

The Choice of a College
By HILDA RICHMOND

THE choice of a higher school or college should be a matter of interest to the parents years before the children are old enough to enter high school. There is a knowledge to be gained by observation and talking with those who have been to college, that helps the parents to exercise good judgment when their sons and daughters come to college age. "By their fruits ye shall know them," is as true of schools and colleges as of anything else in the world—trees or plants or persons—and the college that is turning out modest, studious, ambitious, industrious young men and women who are steadily climbing the ladder of success is safe, while the one that is frequented by idlers and persons interested only in style or athletics and that turns out uppish, conceited, irreverent graduates and has the reputation of allowing the young folks all the freedom and latitude to be found anywhere, is the college to be shunned.

Shall it be the little college or the



Asha Pauline Williams, Westmoreland Co., Pa.

big college? Both have much to commend them. There is an inspiration in the crowd that the little college never can have, while many thoughtful persons argue that the modest little school offers greater opportunities for the formation of character. Certain it is that where students and professors live together intimately, particularly in a small town, there is a strength of character imparted along with the book knowledge that the big school knows nothing about. In the very nature of things the man with hundreds of pupils in his classes daily can never be to those pupils what the man in the small college can be to his "boys and girls." The young people who were privileged to associate intimately with the great Horace Mann surely went out into the world with higher ideals than those who merely had a bowing acquaintance with the president of the large college. It could not be otherwise. The very contact with great people has a beneficial effect on the growing mind and developing character.

Particularly should a college frequented by very rich men's sons and daughters be avoided. The young folks from the farm may feel sure

that they are perfectly competent to keep their minds on their studies and off the frivolities that others have, but, depend upon it, it is far safer and wiser to select an institution where plain living and high thinking rule rather than clothes and automobiles. Many colleges have barred the luxuries of riding horses, automobiles, fine clothes and dissipation, but there are others which have not seen fit to furnish a wholesome lesson even to rich youths by demanding simplicity.

So, even if you have the money to spare, insist upon it that the young men and women from your household shall go to a school that stands for high character, that can show on its list of graduates men and women who are accomplishing things for humanity as well as those who have made money alone, that welcomes with open arms the young folks who must work their way thru, that has reverent, modest teachers well skilled in the studies they hope to impart to others and, above all, that has American ideals from start to finish. The boys and girls are leaving home for the first time and you want them to have the best surroundings that can be found. The old idea that young people should be thrust into temptation in order to prove their merit has happily passed away forever, and the young people of today who can be saved from discontent and idleness and false ideals during those impressionable years from eighteen to twenty-two by the wise selection of a higher institution are the fortunate beings of earth, and the ones who will serve their day and generation best in the years to come.

It is not too early to begin hunting a good school for the toddler just starting to the first grade, nor too late to investigate for the young man or woman who is to set forth in a few months to complete his education. Find out all the good things about the college and do not be afraid to dig up the weak spots, and then you can rest assured that you have done your part in safeguarding your son and your daughter in the first journey into the great world outside the old home.

ATTRACTIVE CURRANT DISHES

Currant Dessert

Put two tablespoonfuls powdered gelatin into a saucepan, add 1 cup currant juice and 1 cup sugar; dissolve over a gentle fire, add half cup whole currants. Set on the ice until the mixture begins to thicken, then fold in 2 cups whipped cream and the stiffly beaten whites of two eggs. Pour into a wet mold, and set in a cool place to firm. Turn out when set, and decorate with a star of whipped and sweetened cream, sprinkled with a few ripe currants.

Currant Custard

Mash 1 quart of currants until soft, and add 1 cup sugar. Put 1 quart of milk in a double boiler, and when lukewarm add 3 well-beaten eggs, half cup sugar and 2 tablespoon corn starch moistened with a

little cold milk or cream. Stir until it thickens and boils (about eight minutes), remove from the fire, add 1 teaspoon lemon juice and the currants, stir well. Serve cold.

Good Currant Pie

Line a pie tin with pastry, fill with stewed currants, sweetened well and flavored with a little nutmeg. Cover with puff paste and bake. Sprinkle with powdered sugar when serving.

Currant Ice Cream

Four cupfuls of thin cream, 1 cup sugar, 1 teaspoon lemon juice, a pinch of salt and 2 cups currants. Mix the ingredients, and freeze without cooking.

Boiled Currant Pudding

Line a buttered baking dish with rich biscuit dough rolled out one-half inch thick. Fill with red and white currants sprinkled well with sugar, and cover with a top crust. Pinch the edges of the crusts well together, tie over it a floured pudding cloth, and boil three hours in water, which must not cease boiling from the moment the pudding is put in until done. Serve with cream or a sweet sauce.

The Sauce—To make the sauce, beat the yolk of one egg until thick, add gradually half cup sifted gran-



Elizabeth Boyer, Schuylkill Co., Pa.

ulated sugar, beat thoroughly, then add 4 drops of orange flavor, and serve.

Currant Muffins

To two cups sifted flour, half cup sugar and a pinch of salt, add gradually three-fourths cup of sweet milk and two tablespoons melted butter. Then put in the yolks of two eggs and beat the mixture well. Now add two teaspoons baking-powder and the well-beaten whites of the eggs. Wash and dry 1 cup of firm currants, sprinkle lightly with flour, and add to the muffin batter.—Helen Lyman, Mass.

CANNING RHUBARB

To Can Cooked Rhubarb

It is not necessary to cook the rhubarb very much because the strong acid content will preserve it. Cook it only enough to reduce the bulk so that a lot can be put into each can. Sweeten it or not, as you prefer. You will find that if the sugar is cooked into the rhubarb before canning it will require a little less sugar than when you put it in after the cans are opened, that is, unless you heat it in before serving. With the sugar cooked in before canning, the rhubarb is ready to serve as cold sauce at once. However, you may like hot rhubarb sauce, as we do at our house, in winter. Make sure that your cans are thoroughly sterilized.

PENNSYLVANIA FARMER PATTERNS

Give figures and letters of each pattern exactly as printed at beginning of each description or we will not be responsible for correct fitting of orders. Give bust measure when ordering waist patterns, waist measure for skirt, and age for children's patterns. Address Pennsylvania Farmer, 261 S. Third Street, Philadelphia, Pa.

3601.—Suit For Small Boys.—The pattern is cut in 4 sizes: 2, 3, 4 and 5 years. A 4-year size will require 1½ yard of 24-inch material for the blouse and 3 yards for the trousers. Linen, drill, gingham, seersucker, madras and percale are good for blouse and trousers. Serge, khaki and corduroy are also suitable for the trousers. Pattern, 10 cents.



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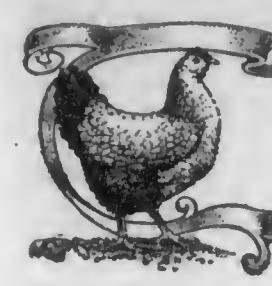
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House Plans—Bulletin H-131 has hints on house-planning. It is published by N. Y. College of Agriculture at Ithaca, N. Y.

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POULTRY

FEEDING CHICKS

I will be very much obliged if you will tell me what to use for a growing mash and scratch feed. As we live on a farm we have plenty of wheat, corn, oats and skimmed milk.—W. C. K., York Co., Pa.

A good mash for young chicks can be made of equal parts by weight of bran, middlings, corn meal and ground oats and beef scrap. The oats should be sifted to remove the bulky hulls. Here is a simple method of feeding young chicks if you do not wish to buy the commercial scratch feed. First week, rolled oats; second week, rolled oats, 2 parts; cracked wheat, 1 part; third week, rolled oats, 1 part, cracked wheat, 1 part; fourth week, rolled oats, 1 part; cracked wheat, 2 parts; fifth week, cracked wheat, 2 parts, cracked corn, one part. And from the beginning of the fourth week we find it pays to give the chicks all the cracked corn they will clean up at night. After they are five weeks old we have had good success in feeding mixtures of equal parts whole wheat and cracked corn.

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ROOSTER WITH BRONCHITIS

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RUPTURED OVIDUCT

Can you tell us what is the matter with our hens? We have lost quite a few in the last year and don't know what is the matter. They seem to get so heavy on the back end that they can hardly walk and finally get so they can't walk a day or two, then die. I think their bowels must be very loose for the feathers on their back end get so daubed up with manure. We feed oats, buckwheat and wheat and they have the run of the farm. Thanking you for your trouble.—Mrs. I. K., Tioga County, Pa.

The hens probably have ruptured

oviducts. It might be caused by an overfat condition followed by straining on the nest. The birds in such condition walk in a manner often described as penguin fashion. There is no cure and the hens should be killed when the condition is first noted. Then an inspection of the carcass can determine if it is fit for food. The condition can largely be prevented by culling out hens that bag down with fat and furnishing them with a balanced ration and plenty of exercise. Too much corn is the main cause of overfat hens. Such birds can often be reduced by penning them up and feeding a bran and water diet. Furnishing all the scratch litter helps to keep hens from becoming too fat. The best layers show a tendency to turn their feed into eggs and do not fatten so easily as some of the others.—R. G. Kirby.

FEEDING MILK TO HENS

The practice of feeding milk in some form to laying hens is becoming more and more general. In 1915 experiments conducted at the New Jersey Experiment Station to determine its influence by comparing the performance of laying hens fed on sour skim-milk with that of hens receiving no milk, showed very conclusively that milk has a definite place in the nutrition of the laying fowl. Its influence was probably caused first thru its being an excellent source of digestible food material, especially protein, and second, thru the stimulating and invigorating effect which it seems to have in building up a keen appetite and in promoting a greater consumption of food.

One test showed a difference in production for a year of 37 eggs per bird in favor of the milk-fed layers. This meant an increased profit, when the experiment was conducted, over and above food cost of \$1.56 per bird for the pen receiving no milk, as against \$2.68 for the pen receiving milk. These tests, measured in the number of superior eggs produced, indicated that the sour milk possessed nearly five times the value paid for it for feeding purposes; the price paid being 25 cents per 100 pounds.

The feeding of the milk to the laying hens seemed to keep them in better physical condition, lowering mortality and keeping them practically free from disease. It would seem that egg producers could well afford to pay 50 to 60 cents per 100 pounds for sour skim-milk to feed the layers. In the absence of a source of supply, it is unquestionably true that semi-solid buttermilk diluted and fed as a beverage, or even fed in a paste form, will make a very excellent substitute for the real milk product.

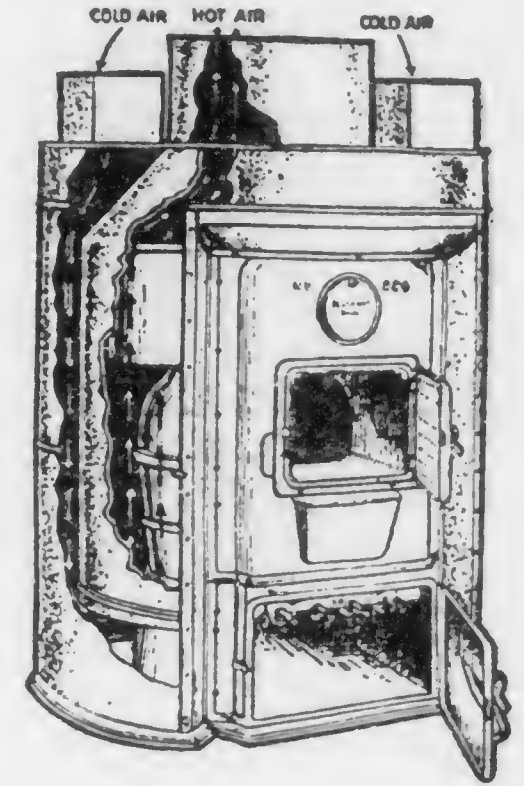
Milk is an economical, excellent and almost necessary adjunct to any poultry ration.

Spend a little time with your chickens. Teach them to eat choice morsels from your hand, to follow you while in the pen and then you will be able to handle them when you want to.

Don't allow the litter in your poultry house to become damp and badly broken up. It will cut down your egg production if you do.

SUMMIT PIPELESS FURNACE

No Cold Air Drafts Over Your Floors



In this great improvement over the old type of Pipeless furnace, the SUMMIT led the way. The special SUMMIT installation, eliminating cold air floor drafts, was the first, and it still stands as the best system on the market.

Reasonable in price, easy to install, economical in consumption of fuel, reliable at all times. Built of the best materials and sold to you under a broad guarantee. When you put a SUMMIT PIPELESS in your cellar you know that your house will be warm and comfortable.

No Cold Air Floor Drafts

The special SUMMIT installation does away with all cold air drafts over your floors. Two cold air returns placed at a distance from either side of the hot air register take in the cold air, which is returned to the heating surface of the furnace, without having to pass over the floors on its return.

Write for particulars and name of nearest dealer.

SUMMIT FOUNDRY CO.
GENEVA, N.Y.

Nightingale Hosiery

Pre-War Quality at Pre-War Prices

Our heavy 14 strand 19 in. ladies' fashioned

3 Pair For \$4.00

our ladies' merino wool hose retail at:

3 Pair For \$1.50

our special men's 10 strand silk retails at:

3 Pair For \$2.50

Colors, Black, White and regular shades of brown. If your dealer hasn't this brand write to us and we will send you a sample of the material. We will send order promptly. Postage paid.

E. & R. HOSIERY CO., READING, PA.

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at a PRICE you can afford

Tell us the size you want. Let us tell you the price. Write us FIRST before you BUY. We will SAVE YOU MONEY. High class sales men and local agents wanted.

QUALITY MANUFACTURING CO.
HAGERSTOWN, MD.

GILLETTE SAFETY RAZOR FREE SERGE PANTS BARGAIN

\$6.50 Value—NOW \$3.98

FREE

This Genuine Gillette Safety Razor and 3 Extra Blades

FREE

The Howard-Lux Co. is always first to give the public the best bargains obtainable. In order to introduce our Fine Navy Serge Dress Pants we will give for a limited time a genuine Gillette Safety Razor and three Extra Blades Free.

Pants are made of fine durable serge, well tailored and absolutely guaranteed to be the equal of any \$6.50 pants. Our price \$3.98 with Razor free. Color, Navy Blue. Sizes, 30 to 44 waist, 30 to 34 inch inseam.

BE SURE TO GIVE WAIST AND INSEAM MEASURE

SEND NO MONEY Just send your name and address, giving sizes wanted and we will send both for only \$3.98. Order Now, Don't Delay. Get a Razor Free. Order by No. 127. C32.

THE HOWARD-LUX CO. Dept. 127 CLEVELAND, OHIO



A Hundred Uses on the Farm

The Adams Motor Trailer, a general utility vehicle, will soon make itself indispensable, save time and money, enable you to do the odd jobs quickly, and without added expense. Uses surplus power otherwise wasted. Pays for itself in a few months.

Goes Anywhere—Trails Perfectly

Light, well-balanced, carefully designed, honestly built, of the best materials, steel and wood, the Adams Trailer is an efficient, instantly attached trailing vehicle, suitable for innumerable purposes. Special bodies for special purposes. Capacity 1500 pounds. May be attached to any standard make of car.

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User Representatives Wanted in Every County

We want representation everywhere. Write for our special proposition, by which you can buy your trailer at a special discount, become our representative in your locality and make good profits for yourself. Easy to sell. Labor and power saving features seen at a glance. No trouble to demonstrate. Quick profits. Prices, discounts and full information on request. Write today.

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Human and Veterinary

As a veterinary remedy its curative qualities have been acknowledged for many years in cases of Curb, Splint, Sweeney, Capped Hock, Strained Tendons, Spavin, Ringbone and other bony tumors.

A Perfect Antiseptic Soothing and Healing

For treatment of Rheumatism, Sprains, Neuralgia, Lumbago, Sore Throat, Stiff Joints, Cuts and Bruises it is invaluable. \$1.75 per bottle at druggists, or sent by parcel post on receipt of price. The Lawrence-Williams Co., Cleveland, O.

PLANTS

ALL LEADING VARIETIES
Cabbage Plants \$1.00 per 1000
Pepper Plants \$2.00 per 1000
Tomato Plants \$1.50 per 1000
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All Plants Packed Carefully in Moss
OROL LEDDEN, Sewell, N.J.
Bell Phone, Wrentham 8-1-2
Largest Grower of Vegetable Plants in N. J.
Full Line of High Grade Seeds at Lowest Prices

Strawberry Plants For August and Fall planting. For green and runner plants that will bear fruit next summer. BERRY-BERRY, BLACKBERRY, GOOSEBERRY, RASPBERRY, CUMBER, GRAPE, ASPARAGUS, & FLOWERING PLANTS. BUSHES and SHRUBS for full planting Catalogue free. HARRY H. SQUIRES, Good Ground, New York

HAY W. D. POWER & CO., 601 W. 33 St., New York
H are the largest handlers of commission hay
H in greater New York; if you have hay to
H dispose of communicate with them.
HAY

Hardy Cabbage, Tomato, Collard Plants
7 leading varieties, postpaid, 200, \$1.00; 500, \$1.25;
1,000, \$2.25; 2,000, expressed, \$4.00. Sweet Potato
Plants, Jersey, Sassy, Hills, 500, \$1.75; 1,000,
\$2.75; 10,000, \$27.50 paid.
Maple Grove Plant Farm, Franklin, Va.

VEGETABLE PLANTS—Cabbage Plants, all kinds,
\$1.25 per 1,000. Tomato, best varieties, \$2.00 per
1,000. Pepper Plants, \$3.50 per 1,000. Cauliflower,
\$3.50 per 1,000. Celery, \$1.25 per 1,000.
J. C. SCHMIDT, BRISTOL, PA.

BINDER TWINE
Farmers get our low factory price and save money.
Agents wanted. Samples free.
THOS. BURT & SONS, MELROSE, OHIO.

Our Young People's Forum

A BIG PROJECT

All vocational school students and club members are familiar with project work, and know that there are projects of all kinds and sizes. There are livestock projects that take in everything from cattle to goats and others which include cotton raising, maple-sugar making, beekeeping and everything that goes between. Young people in club work alone raised \$1,321,581 worth of swine in 1919. But to get down to our subject, we have a letter this week from two girls who are conducting the biggest project we know of and they are making a success of it. They are running a big farm in Ocean County, New Jersey, and have entire charge of it themselves. In a note of explanation Miss Munnie Mullen, one of the girls, says:

"I am just twenty years old and am the manager. Miss Dove is my companion and partner." Things did not always go smoothly on this "project" but the girls decided that where there is a will there is a way and they set out to find the way. We will let them tell of their experiences:

Berkshire pig and two horses for driving. I also have sent for a registered purebred Holstein bull three months old which I expect here to-day. It seems that our luck has changed for no one could have better luck than we are having now. Last year this time we did not have any little chicks as our hens did not set until so late. We want to raise at least 500 this year. On this farm we have lots of fresh hay. If nothing happens we will have 50 tons and maybe more, besides tons of meadow hay. I don't do any of the field work. I used to, but it was too hard. We have 10 acres of corn planted on shares, from which I hope to get at least 150 bushels. This farm is along the bay shore and is very cool. I think later we will raise some Guernsey heifers. We sell about 20 quarts of milk a day which helps us with our expenses. We also have plenty of milk for our pig and chickens. The latter are growing fine and we have some large enough to eat. I think this will give you an idea now of what we girls are doing.—(Signed)

MISS MUNNIE A. MULLEN,
MISS MARION L. DOVE.

"We two girls liking outdoor life,



This Shows Miss Mullen, Miss Dove and a Friend With Some of the Calves and Their Pure-blooded Scotch Collie

and its pleasures, thought we would like cattle-raising along with chickens. We took a farm last March, one year ago, 1920. We had only two cows, 18 hens and one little horse to start with. We sold milk in town to get spending money. As we could not get any heifer calves to raise from around here we sent to New York and bought high grade calves of which we purchased five. We had fine luck in raising them. I fed them from a bucket, containing milk and ground oats.

"In the line of chickens, we raised a few more than one hundred from our eighteen hens and kept fifty nice ones to start with this year. It being our first year, it was quite an uphill job, for later in the summer a disease struck the horses and we lost three. That left us none and we didn't venture to buy, but later purchased one of a woman and it proved a stolen horse so I was out the price I paid for that one, too. Along with that we lost a big cow worth \$125.

It seemed as if luck was against us for the first year. But I was determined not to give up. Last December thirteenth we moved from that farm to a much better one of 700 acres. We have at the present time seven nice heifers, four cows, fifty hens, 150 little chicks, a nice

HARDING'S HOBBY

Scarcely anything in the everyday run of human affairs is much more interesting than a hobby, particularly if it chance to have in it something of advantage to those whose lives, it may be, are filled with stern duties. The President of the United States has a hobby. "If I can do anything to change disappointment into new hope," said Mr. Harding, speaking one afternoon to the Washington correspondent, "I shall have satisfied the best hobby a man can have in this world."

AVERAGE PENNA. ALTITUDE

The approximate mean elevation of Pennsylvania is 1100 feet. The highest point now known is Negro Mountain, in Somerset County, which is 3220 feet above the sea level. Until 1919, when the topographic survey of the area including Negro Mountain was made, Blue Mountain in Bedford County (elevation 3126 feet) was thought to be the highest point in the state. It is barely possible, as the topographic surveys are extended that still higher points may be found.

The surface of Delaware River where it leaves Pennsylvania is at sea level.

PASSING EVENTS IN PICTURES



1—"Babe" Ruth knocking one high up in the air—Schalk behind the bat is anxiously waiting for it to start downward.
2—The library at Wellesley College, Wellesley, Mass., one of the oldest and most famous women's colleges of the country.
3—Pauline Henkel, 16, of New York City, has been made a colonel for the second time because she sold \$3,336,250 worth of

Liberty Bonds during the war.
4—The finest batiste and net make this adorable frilly dress for the little girl—the heruffled cap is made of organdie.
5—Mrs. Edward Everett Marshall on "Hercules" clearing a hurdle at the Deacon Horse Show recently held at Philadelphia.
6—Archery has been revived at the Wellesley College, which helps to develop a

steady hand and a true eye.
7—New York's Police Sergeant Spaulding, under the direction of Detroit's Commissioner of Police Carlleton Follen, M. D., now has a "Navy" to catch the dregs of the underworld who attempt to land narcotics from the country for illegal purposes. The police have confiscated hundreds of their sacks of dollars worth of drugs recently.



Of Interest to Farm Women and Girls

The Choice of a College

By HILDA RICHMOND

THE choice of a higher school or college should be a matter of interest to the parents some before the children are old enough to enter high school. There is a knowledge to be gained by observation and talking with those who have been to college, that helps the parents to exercise good judgment when their sons and daughters come to college age. "By their fruits ye shall know them," is as true of schools and colleges as of anything else in the world—trees or plants or persons—and the college that is turning out modest, studious, ambitious, industrious young men and women who are steadily climbing the ladder of success is safe, while the one that is frequented by idlers and persons interested only in style or athletics and that turns out uppish, conceited, irreverent graduates and has the reputation of allowing the young folks all the freedom and latitude to be found anywhere, is the college to be shunned.

Shall it be the little college or the



Asha Pauline Williams, Westmoreland Co., Pa.

big college? Both have much to commend them. There is an inspiration in the crowd that the little college never can have, while many thoughtful persons argue that the modest little school offers greater opportunities for the formation of character. Certain it is that where students and professors live together intimately, particularly in a small town, there is a strength of character imparted along with the book knowledge that the big school knows nothing about. In the very nature of things the man with hundreds of pupils in his classes daily can never be to those pupils what the man in the small college can be to his "boys and girls." The young people who were privileged to associate intimately with the great Horace Mann surely went on into the world with higher ideals than those who merely had a hazy acquaintance with the president of the large college. It could not be otherwise. The very contact with great people has a beneficial effect on the growing mind and developing character.

Particularly should a college frequented by very rich men's sons and daughters be avoided. The young folks from the farm may feel sure

that they are perfectly competent to keep their minds on their studies and off the frivolities that others have, but, depend upon it, it is far safer and wiser to select an institution where plain living and high thinking rule rather than clothes and automobiles. Many colleges have barred the luxuries of riding horses, automobiles, fine clothes and dissipation, but there are others which have not seen fit to furnish a wholesome lesson even to rich youths by demanding simplicity.

So, even if you have the money to spare, insist upon it that the young men and women from your household shall go to a school that stands for high character, that can show on its list of graduates men and women who are accomplishing things for humanity as well as those who have made money alone, that welcomes with open arms the young folks who must work their way thru, that has reverent, modest teachers well skilled in the studies they hope to impart to others and, above all, that has American ideals from start to finish. The boys and girls are leaving home for the first time and you want them to have the best surroundings that can be found. The old idea that young people should be thrust into temptation in order to prove their merit has happily passed away forever, and the people of today who can be saved from discontent and idleness and false ideals during those impressionable years from eighteen to twenty-two by the wise selection of a higher institution are the fortunate beings of earth, and the ones who will serve their day and generation best in the years to come.

It is not too early to begin hunting a good school for the toddler just starting to the first grade, nor too late to investigate for the young man or woman who is to set forth in a few months to complete his education. Find out all the good things about the college and do not be afraid to dig up the weak spots, and then you can rest assured that you have done your part in safeguarding your son and your daughter in the first journey into the great world outside the old home.

ATTRACTIVE CURRANT DISHES

Currant Dessert

Put two tablespoonfuls powdered gelatin into a saucepan, add 1 cup currant juice and 1 cup sugar; dissolve over a gentle fire, add half cup whole currants. Set on the ice until the mixture begins to thicken, then fold in 2 cups whipped cream and the stiffly beaten whites of two eggs. Pour into a wet mold, and set in a cool place to firm. Turn out when set, and decorate with a star of whipped and sweetened cream, sprinkled with a few ripe currants.

Currant Custard

Mash 1 quart of currants until soft, and add 1 cup sugar. Put 1 quart of milk in a double boiler, and when lukewarm add 3 well-beaten eggs, half cup sugar and 2 tablespoons corn starch moistened with a

little cold milk or cream. Stir until it thickens and boils about eight minutes, remove from the fire, add 1 teaspoon lemon juice and the currants, stir well. Serve cold.

Good Currant Pie

Line a pie tin with pastry, fill with stewed currants, sweetened well and flavored with a little nutmeg. Cover with puff paste and bake. Sprinkle with powdered sugar when serving.

Currant Ice Cream

Four cupfuls of thin cream, 1 cup sugar, 1 teaspoon lemon juice, a pinch of salt and 2 cups currants. Mix the ingredients, and freeze without cooking.

Boiled Currant Pudding

Line a buttered baking dish with rich biscuit dough rolled out one-half inch thick. Fill with red and white currants sprinkled well with sugar, and cover with a top crust. Pinch the edges of the crusts well together, tie over it a floured pudding cloth, and boil three hours in water, which must not cease boiling from the moment the pudding is put in until done. Serve with cream or a sweet sauce.

The Sauce—To make the sauce, beat the yolk of one egg until thick, add gradually half cup sifted gran-



Elizabeth Boyer, Schuylkill Co., Pa.

ulated sugar, beat thoroughly, then add 4 drops of orange flavor, and serve.

Currant Muffins

To two cups sifted flour, half cup sugar and a pinch of salt, add gradually three-fourths cup of sweet milk and two tablespoons melted butter. Then put in the yolks of two eggs and beat the mixture well. Now add two teaspoons baking-powder and the well-beaten whites of the eggs. Wash and dry 1 cup of firm currants, sprinkle lightly with flour, and add to the muffin batter.—Helen Lyman, Mass.

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To Can Cooked Rhubarb

It is not necessary to cook the rhubarb very much because the strong acid content will preserve it. Cook it only enough to reduce the bulk so that a lot can be put into each can. Sweeten it or not, as you prefer. You will find that if the sugar is cooked into the rhubarb before canning it will require a little less sugar than when you put it in, unless you heat it in before serving. With the sugar cooked in before canning, the rhubarb is ready to serve as cold sauce at once. However, you may like hot rhubarb sauce, as we do at our house, in winter. Make sure that your cans are thoroughly sterilized.



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The rooster is probably suffering from bronchitis due to a cold or caused by infection from dust. Isolate the bird where he will be comfortable and protected from draughts. Give a tablespoonful of castor oil to which five drops of turpentine have been added. Treatment must begin early before the bird is emaciated or it is difficult to cure. Give soft feed such as bread and milk until the rooster shows signs of returning vigor. In very severe cases it is often best to kill the bird. —R. G. K.

RUPTURED OVIDUCT

Can you tell us what is the matter with our hens? We have lost quite a few in the last year and don't know what is the matter. They seem to get so heavy on the back end that they can hardly walk and finally get so they can't walk a day or two, then die. I think their bowels must be very loose for the feathers on their back end get so daubed up with manure. We feed oats, buckwheat and wheat and they have the run of the farm. Thanking you for your trouble.—Mrs. I. K., Tioga County, Pa.

The hens probably have ruptured

oviducts. It might be caused by an overfat condition followed by straining on the nest. The birds in such condition walk in a manner often described as penguin fashion. There is no cure and the hens should be killed when the condition is first noted. Then an inspection of the carcass can determine if it is fit for food. The condition can largely be prevented by culling out hens that bag down with fat and furnishing them with a balanced ration and plenty of exercise. Too much corn is the main cause of overfat hens. Such birds can often be reduced by penning them up and feeding a bran and water diet. Furnishing all the scratch litter helps to keep hens from becoming too fat. The best layers show a tendency to turn their feed into eggs and do not fatten so easily as some of the others.—R. G. Kirby.

FEEDING MILK TO HENS

The practice of feeding milk in some form to laying hens is becoming more and more general. In 1915 experiments conducted at the New Jersey Experiment Station to determine its influence by comparing the performance of laying hens fed on sour skim-milk with that of hens receiving no milk, showed very conclusively that milk has a definite place in the nutrition of the laying fowl. Its influence was probably caused first thru its being an excellent source of digestible food material, especially protein, and second, thru the stimulating and invigorating effect which it seems to have in building up a keen appetite and in promoting a greater consumption of food.

One test showed a difference in production for a year of 37 eggs per bird in favor of the milk-fed layers. This meant an increased profit, when the experiment was conducted, over and above food cost of \$1.56 per bird for the pen receiving no milk, as against \$2.68 for the pen receiving milk. These tests, measured in the number of superior eggs produced, indicated that the sour milk possessed nearly five times the value paid for it for feeding purposes; the price paid being 25 cents per 100 pounds.

The feeding of the milk to the laying hens seemed to keep them in better physical condition, lowering mortality and keeping them practically free from disease. It would seem that egg producers could well afford to pay 50 to 60 cents per 100 pounds for sour skim-milk to feed the layers. In the absence of a source of supply, it is unquestionably true that semi-sold buttermilk diluted and fed as a beverage, or even fed in a paste form, will make a very excellent substitute for the real milk product.

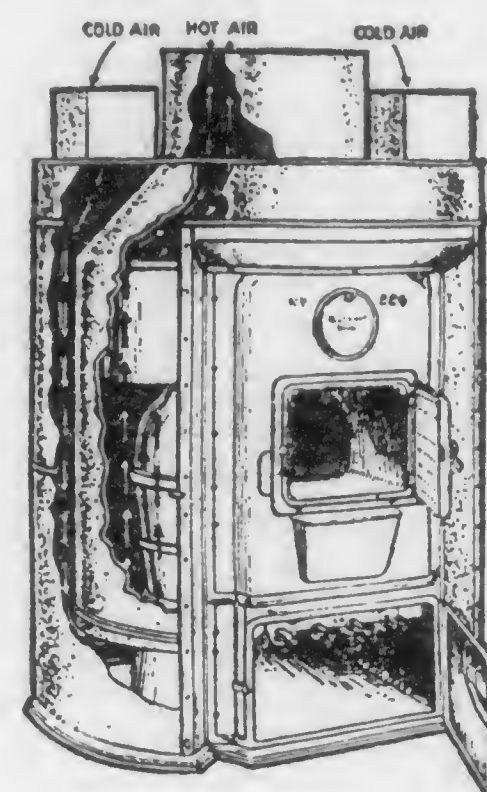
Milk is an economical, excellent and almost necessary adjunct to any poultry ration.

Spend a little time with your chickens. Teach them to eat choice morsels from your hand, to follow you while in the pen and then you will be able to handle them when you want to.

Don't allow the litter in your poultry house to become damp and badly broken up. It will cut down your egg production if you do.

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Holders own, machinery, hay; in splendid farming community 1½ miles town; estimated 1000 cords wood, 200,000 ft. timber; 100 acres tractor worked; 70-acre spring-watered pasture; 200 apple trees, other fruit; good 7-room house with grand outlook, 3 barns, also, etc. Owner retiring; \$3000 takes everything, easy terms. Details upon request. Catalogue for particulars and catalog of 200 farms picked from 1,500 in 14 counties.
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Our Young People's Forum

A BIG PROJECT

All vocational school students and club members are familiar with project work, and know that there are projects of all kinds and sizes. There are livestock projects that take in everything from cattle to goats and others which include cotton raising, maple-sugar making, beekeeping and everything that goes between. Young people in club work alone raised \$1,321,581 worth of swine in 1919. But to get down to our subject, we have a letter this week from two girls who are conducting the biggest project we know of and they are making a success of it. They are running a big farm in Ocean County, New Jersey, and have entire charge of it themselves. In a note of explanation Miss Munnie Mullen, one of the girls, says:

"I am just twenty years old and am the manager. Miss Dove is my companion and partner." Things did not always go smoothly on this "project" but the girls decided that where there is a will there is a way and they set out to find the way. We will let them tell of their experiences:

"We two girls liking outdoor life,

Berkshire pig and two horses for driving. I also have sent for a registered purebred Holstein bull three months old which I expect here today. It seems that our luck has changed for no one could have better luck than we are having now. Last year this time we did not have any little chicks as our hens did not set until so late. We want to raise at least 500 this year. On this farm we have lots of fresh hay. If nothing happens we will have 50 tons and maybe more, besides tons of meadow hay. I don't do any of the field work. I used to, but it was too hard. We have 10 acres of corn planted on shares, from which I hope to get at least 150 bushels. This farm is along the bay shore and is very cool. I think later we will raise some Guernsey helpers. We sell about 20 quarts of milk a day which helps us with our expenses. We also have plenty of milk for our pig and chickens. The latter are growing fine and we have some large enough to eat. I think this will give you an idea now of what we girls are doing.—(Signed)

MISS MINNIE A. MULLEN,
MISS MARION L. DOVE.



This Shows Miss Mullen, Miss Dove and a Friend With Some of the Calves and Their Pure-blooded Scotch Collie

and its pleasures, thought we would like cattle-raising along with chickens. We took a farm last March, one year ago, 1920. We had only two cows, 18 hens and one little horse to start with. We sold milk in town to get spending money. As we could not get any heifer calves to raise from around here we sent to New York and bought high grade calves of which we purchased five. We had fine luck in raising them. I fed them from a bucket, containing milk and ground oats.

"In the line of chickens, we raised a few more than one hundred from our eighteen hens and kept fifty nice ones to start with this year. It being our first year, it was quite an uphill job, for later in the summer a disease struck the horses and we lost three. That left us none and we didn't venture to buy, but later purchased one of a woman and it proved a stolen horse so I was out the price I paid for that one, too. Along with that we lost a big cow worth \$125.

It seemed as if luck was against us for the first year. But I was determined not to give up. Last December thirteenth we moved from that farm to a much better one of 700 acres. We have at the present time seven nice heifers, four cows, fifty hens, 150 little chicks, a nice

HARDING'S HOBBY

Scarcely anything in the everyday run of human affairs is much more interesting than a hobby, particularly if it chance to have in it something of advantage to those whose lives, it may be, are filled with stern duties. The President of the United States has a hobby. "If I can do anything to change disappointment into new hope," said Mr. Harding, speaking one afternoon to the Washington correspondent, "I shall have satisfied the best hobby a man can have in this world."

AVERAGE PENNA. ALTITUDE

The approximate mean elevation of Pennsylvania is 1100 feet. The highest point now known is Negro Mountain, in Somerset County, which is 3220 feet above the sea level. Until 1919, when the topographic survey of the area including Negro Mountain was made, Blue Mountain in Bedford County (elevation 3136 feet) was thought to be the highest point in the state. It is barely possible, as the topographic surveys are extended that still higher points may be found.

The surface of Delaware River where it leaves Pennsylvania is at sea level.

PASSING EVENTS IN PICTURES



1—"Babe" Ruth knocking one high up in the air—Schalk behind the bat is anxiously waiting for it to start downward.
2—The library at Wellesley College, Wellesley, Mass., one of the oldest and most famous women's colleges of the country.
3—Pauline Henkel, 16, of New York City, has been made a colonel for the second time because she sold \$3,330,250 worth of

Liberty Bonds during the war.
4—The finest batiste and net make this adorable frilly dress for the little girl—the heruffled cap is made of organdie.
5—Mrs. Edward Everett Marshall on "Herbie" clearing a hurdle at the Devon Horse Show recently held at Philadelphia.
6—Archery has been revived at the Wellesley College, which helps to develop a

steady hand and a true eye.
7—New York's Police Narcotic Squad under the direction of Deputy Commissioner of Police Carleton Simon, M. D., now has a "Navy" to catch the daring drug smugglers who attempt to bring narcotics into the country for illegal purposes. The police have confiscated hundreds of thousands of dollars worth of drugs recently.

The Valley of the Giants

By PETER B. KYNE

Synopsis—John Cardigan, a middle-aged man—a giant in frame and mind—was a pioneer settler along the Pacific coast in Humboldt County, California, in 1850. His business was cutting the giant trees into lumber. His young wife died and was buried among the redwoods in "The Valley of the Giants" as he called the spot which he loved and preserved as a shrine to her memory. Bryce, Cardigan's only son, was an ultimate chum of his father—who planned that he should inherit the great lumber business which he had built up. Bryce had a brief love affair with Shirley Sumner, a victor to the neighborhood, but she was soon forgotten. Cardigan tried to buy a tract of timber adjoining his and refused to be bluffed into raising his offer for it. He determined to move his mill to the San Hedrin watershed and start logging operations there. Bryce, after four years of college in the East, and two years of travel abroad returned to Sequoia. He was met at the train by George Sea Otter. Bryce developed an interest in a young woman who got off the train with him and found no man who met her. He learned that she was Shirley Sumner and she accepted his invitation to ride to Sequoia with him. Upon arriving home he found that his father had been nearly blind for two years and that he was in danger of losing his redwoods to his competitor, Colonel Pennington.

Chapter IX

"I'll not throw in with you, Bill, at my time of life. I don't want to have the worry of building, maintaining, and operating twelve miles of private railroad. But I'll loan you, without security—"

"You'll have to take an unsecured note, John. Everything I've got is hooked."

"—the money you need to build and equip the road," finished Cardigan. "In return you are to shoulder all the grief and worry of the road and give me a ten-year contract at a dollar and a half per thousand feet, to haul my logs down to tidewater with your own. My minimum haul will be twenty-five million feet annually, and my maximum fifty million."

"Sold!" cried Henderson. And it was even so.

Bryce came out of his reverie. "And now?" he queried of his father.

"I mortgaged the San Hedrin timber in the south to buy the timber in the north, my son; then after I commenced logging in my new holdings, came several long, lean years of famine. I stuck it out, hoping for a change for the better; I couldn't bear to close down my mill and logging-camps, for the reason that I could stand the loss far more readily than the men who worked for me and depended upon me. But the market dragged in the doldrums, and Bill Henderson died, and his boys got discouraged, and—"

A sudden flash of inspiration illumined Bryce Cardigan's brain. "And they sold out to Colonel Pennington," he cried.

"Exactly. The Colonel took over my contract with Henderson's company, along with the other assets, and it was incumbent upon him, as assignee, to fulfill the contract. For the past two years the market for redwood has been most gratifying, and if I could only have gotten a maximum supply of logs over Pennington's road, I'd worked out of the hole, but—"

"He manages to hold you to a minimum annual haul of twenty-five million feet, eh?"

John Cardigan nodded. "He claims he's short of rolling-stock—that wrecks and fires have embarrassed the road. He can always find excuses for failing to spot in logging-trucks for Cardigan's logs. Bill Henderson never played the game that way. He gave me what I wanted and never held me to the minimum haulage when I was prepared to give him the maximum."

"What does Colonel Pennington want, pard?"

"He wants," said John Cardigan slowly, "my Valley of the Giants and a right of way thru my land from

the valley to a log-dump on deep water."

"And you refused him?"

"Naturally. You know my ideas on that big timber." His old head sank low on his breast. "Folks call them Cardigan's Redwoods now," he murmured. "Cardigan's Redwoods—and Pennington would cut them! Oh, Bryce, the man hasn't a soul!"

"But I fail to see what the loss of Cardigan's Redwoods has to do with the impending ruin of the Cardigan Redwood Lumber Company," his son reminded him. "We have all the lumber we want."

"My ten-year contract has but one more year to run, and recently I tried to get Pennington to renew it. He was very nice and sociable, but—he named me a freight rate, for a renewal of the contract for five years, of three dollars per thousand feet. That rate is prohibitive and puts us out of business."

"Not necessarily," Bryce returned evenly. "How about the State railroad commission? Hasn't it got

"I'm mortgaged to the last penny," he confessed, "and Pennington has been buying Cardigan Redwood Lumber Company first-mortgage bonds until he is in control of the issue. He'll buy in the San Hedrin timber at the foreclosure sale, and in order to get it back and save something for you out of the wreckage, I'll have to make an unprofitable trade with him. I'll have to give him my timber adjoining his north of Sequoia, together with my Valley of the Giants, in return for the San Hedrin timber, to which he'll have a sheriff's deed. But the mill, all my old employees, with their numerous dependents—gone, with you left land-poor and without a dollar to pay your taxes. Smashed—like that! And he drove his fist into the palm of his hand."

"Perhaps—but not without a fight," Bryce answered, altho he knew their plight was well-nigh hopeless. "I'll give that man Pennington a run for his money, or I'll know the reason."

The telephone on the table beside him tinkled, and he took down the receiver and said "Hello!" "Mercy!" came the clear, sweet voice of Shirley Sumner over the wire. "Do you feel as savage as all that, Mr. Cardigan?"

For the second time in his life the

another. Some evening next week, when that dear old daddy of yours can spare his boy, you might be interested to see our hurl-redwood-paneled dining room Uncle Seth is so proud of. I'm too recent an arrival to know the hour at which Uncle Seth dines, but I'll let you know later and name a definite date. Would Thursday night be convenient?"

"Perfectly. Thank you a thousand times."

She bade him good-night. As he turned from the telephone, his father looked up. "What are you going to do tomorrow, lad?" he queried.

"I have to do some thinking tomorrow," Bryce answered. "So I'm going up into Cardigan's Redwoods to do it. Up there a fellow can get set, as it were, to put over a thought with a punch in it."

"The dogwoods and rhododendron are blooming now," the old man murmured wistfully. Bryce knew what he was thinking of. "I'll attend to the flowers for Mother," he assured Cardigan, and he added fiercely: "And I'll attend to the battle for Father. We may lose, but that man Pennington will know he's been in a fight before we fin—"

He broke off abruptly, for he had just remembered that he was to dine at the Pennington house the following Thursday—and he was not the sort of man who smilingly breaks bread with his enemy.

Chapter X

For many years there had been installed in Cardigan's mill a clock set to United States observatory time and corrected hourly by the telegraph company. It was the only clock of its kind in Sequoia; hence folk set their watches by it, or rather by the whistle on Cardigan's mill. With a due appreciation of the important function of this clock toward his fellow-citizens, old Zeb Curry, the chief engineer and a stickler for being on time, was most meticulous in his whistle-blowing. With a sage and prophetic eye fixed upon the face of the clock, and a particularly greasy hand grasping the whistle-cord, Zeb would wait until the clock registered exactly six-fifty-nine and a half—whereupon the seven o'clock whistle would commence blowing, to cease instantly upon the stroke of the hour.

It was old Zeb's pride and boast that with a single exception, during the sixteen years the clock had been in service, no man could say that Zeb had been more than a second late or early with his whistle-blowing. That exception occurred when Bryce Cardigan, invading the engine room while Zeb was at luncheon, looped the whistle-cord until the end dangled seven feet above ground. As a consequence Zeb, who was a short, fat little man, was forced to leap at it several times before success crowned his efforts and the whistle blew. Thereafter for the remainder of the day his reason tottered on its throne, due to the fact that Bryce induced every mill employee to call upon the engineer and remind him that he must be growing old, since he was no longer dependable!

On the morning following Bryce Cardigan's return to Sequoia, Zeb Curry, as per custom, started his engine at six fifty-eight. That gave the huge bandsaws two minutes in which to attain their proper speed and afforded Dan Kenyon, the head sawyer, ample time to run his steam log-carriage out to the end of the track; for Daniel, too, was a reliable

man in the matter of starting his daily uproar on time.

At precisely six fifty-nine and a half, therefore, the engineer's hand closed over the handle of the whistle-cord, and Dan Kenyon, standing on the steam-carriage with his hand on the lever, took a thirty-second squint thru a rather grimy window that gave upon the drying-yard and the mill-office at the head of it.

The whistle ceased blowing, but still Dan Kenyon stood at his post, oblivious of the hungry saws. Ten seconds passed; then Zeb Curry, immeasurably scandalized at Daniel's tardiness, tooted the whistle sharply twice; whereupon Dan woke up, threw over the lever, and walked his log up to the saw.

The next five hours Zeb Curry had no opportunity to discuss the matter with the head sawyer. After blowing the twelve o'clock whistle, however, he hurried over to the dining-hall, where the mill hands already lined the benches, shoveling food into their mouths as only a lumberman or a miner can. Dan Kenyon sat at the head of the table in the place of honor sacred to the head sawyer, and when his mouth would permit of some activity other than mastication, Zeb Curry caught his eye.

"Hey, you, Dan Kenyon," he shouted across the table, "what happened to you this mornin'? It was sixteen seconds between the tail end o' my whistle an' the front end o' your whinin'. First thing you know, you'll be gettin' so slack an' careless-like some other man'll be ridin' that log-carriage o' yours."

"I was struck dumb," Dan Kenyon replied. "I just stood there like one o' these here graven images. Last night on my way home from work I heard the young feller was back—he got in just as we was knockin' off for the day; an' this mornin' just as you cut loose, Zeb, I'll be danged if he didn't show up in front of the office door, fumblin' for the keyhole. Yes, sirree! That boy gets in at six o'clock last night an' turns to on his paw's job when the whistle blows this mornin' at seven."

"You mean young Bryce Cardigan?" Zeb queried incredulously.

"I shore do."

"Taint possible," Zeb declared. "You seen a new bookkeeper, mebby, but you didn't see Bryce. He aint no such hog for labor as his daddy before him, I'm tellin' you. Not that there's a lazy bone in his body, for there aint, but because that there boy's got too much sense to come bollin' down to work at seven o'clock the very first mornin' he's back from Yurrupe."

"I'm layin' you ten to one I seen him," Dan replied defiantly, "an' what's more, I'll bet a good cigar—a ten-center straight—the boy don't leave till six o'clock tonight."

"You're on," answered the chief engineer. "Them's lumberjack hours, man. From seven till six means work—an' only fools an' hosses keeps them hours."

The head sawyer leaned across the table and pounded with the handle of his knife until he had the attention of all present. "I'm a-goin' to tell you young fellers somethin'," he announced. "Ever since the old boss got so he couldn't look after his business with his own eyes, things has been goin' to blazes round this saw-mill, but they ain't a-goin' no more. How do I know? Well, I'll tell you. All this forenoon I kept my eye on the office door—I can see it thru a mill window; an' I'm tellin' you the old boss didn't show up till ten o'clock, which the old man aint

never been a ten o'clock business man at no time. Don't that prove the boy's took his place?"

Confused murmurs of affirmation and negation ran up and down the long table. Dan tapped with his knife again. "You hear me," he warned. "Thirty year I've been ridin' John Cardigan's log-carriages; thirty year I've been gettin' everythin' out of a log it's possible to git out, which is more'n you fellers at the trimmers can git out of a board after I've sawed it off the cant. There's a lot o' you young fellers that've been takin' John Cardigan's money under false pretenses, so if I was you I'd keep both eyes on my job hereafter. For a year I've been clamin' that good No. 2 stock has been chucked into the slab-fire as refuge lumber." (Dan meant refuse lumber). "But it won't be done no more. The raftsmen tells me he seen Bryce down at the end o' the conveyin' belt givin' that refuge the once over—so step easy."

"What does young Cardigan know about runnin' a sawmill?" a planer-man demanded bluntly. "They tell me he's been away to college an' travelin' the past six years."

"Wa-ll," drawled the head sawyer, "you git to talkin with him some day an' see how much he knows about runnin' a sawmill. What he knows will surprise you. Yes, indeed, you'll find he knows considerable. He's picked up loose shingles around the yard an' bundled 'em in vacation times, an' I want to see the shingle-weaver that can teach him some tricks. Also, I've had him come up on the steam carriage more'n once an' saw up logs, while at times I've seen him put in a week or two on the sortin' table. In a pinch, with a lot o' vessels loadin' here at the dock an' the skippers raisin' Cain because they wasn't gettin' their cargo fast enough, I've seen him work nights an' Sundays tallyin' with the best o' them. Believe me that boy can grade lumber."

"An' I'll tell you somethin' else," Zeb Curry cut in. "If the new boss ever tells you to do a thing his way, you do it an' don't argue none as to whether he knows more about it than you do or not."

"A whole lot o' dagos an' bohunks that's come into the woods since the blue-noses an' cannicks an' wild Irish went out had better keep your eyes open," Dan Kenyon warned safely. "There aint no one o' you any better'n you ought to be, an' things have been pretty durned slack around Cardigan's mill since the old man went blind, but—you watch out. There's a change due. Bryce Cardigan is his father's son. He'll do things."

"Which he's big enough to throw a bear uphill by the tail," Zeb Curry added, "an' you fellers all know how much tail a bear has."

"Every mornin' for thirty years, 'ceptin' when we was shut down for repairs," Dan continued, "I've looked thru that window, when John Cardigan wasn't away from Sequoia, to watch him git to his office on time. He's there when the whistle blows, clear up to the time his eyes go back on him, an' then he arrives late once or twice on account o' havin' to go careful. This mornin', for the first time in fifty year, he stays in bed; but—his son has the key in the office door when the whistle blows, an'—"

Dan Kenyon paused abruptly; the hum of conversation ceased, and silence fell upon the room as Bryce Cardigan strolled in the door, nodded to the men, and slid in on the bench to a seat beside the head sawyer.

"Hello Dan—hello Zeb," he said

and shook hands with each. "I'm mighty glad to see you both again. Hello, everybody. I'm the new boss, so I suppose I'd better introduce myself—there are so many new faces here. I'm Bryce Cardigan."

"Yes," Zeb Curry volunteered, "an' he's like his daddy. He ain't ashamed to work with his men, an' he ain't ashamed to eat with his men, either. Glad you're back with us again, boy—mighty glad. Dan, here, he's gittin' slacken'n an old squaw with his work an' needs somebody to jerk him up, while the rest o' these here—"

"I noticed that about Dan," Bryce interrupted craftily. "He's slowing up, Zeb. He must have been fifteen seconds late this mornin'—or perhaps," he added, "you were fifteen seconds earlier than the clock."

Dan grinned, and Bryce went on seriously: "I'm afraid you're getting too old to ride the log-carriage, Dan. You've been at it a long time; so, with the utmost good will in the world toward you, you're fired. I might as well tell you now. You know me, Dan. I always did dislike beating about the bush."

"Fired!" Dan Kenyon's eyes popped with amazement and horror.

"Fired—after thirty years!" he croaked.

"Fired!" There was unmistakable finality in Bryce's tones. "You're hired again, however, at a higher salary, as mill-superintendent. You can get away with that job, can't you, Dan? In fact," he added without waiting for the overjoyed Dan to answer him, "you've got to get away with it, because I discharged the mill-superintendent I found on the job when I got down here this mornin'. He has been letting too many profits go into the slab-fire. In fact, the entire plant has gone to glory. Fire-hose old and rotten—couldn't stand a hundred-pound pressure; fire-buckets and water-barrels empty, axes not in their proper places, fire-extinguishers filled with stale chemical—why, the smallest kind of a fire here would get beyond our control with that man on the job. Besides, he's changed the gradin'-rules. I found the men putting clear boards with hard-grained streaks in them in with the No. 1 clear. The custom may not kick at a small percentage of No. 2 in his No. 1 but it's only fair to give it to him at two dollars a thousand less."

"Well," purred Zeb Curry, "they don't grade lumber as strict nowadays as they used to before you went away. Colonel Pennington says we're a lot o' back numbers out this way an' too generous with our grades. First thing he did was to call a meetin' of all the Humboldt lumber manufacturers an' organize 'em into an association. Then he had the gradin'-rules changed. The retailers hollered for a while, but bimeby they got used to it."

"Did my father join that association?" Bryce demanded quickly.

"Yes. He told Pennington he wasn't goin' to be no obstructionist in the trade, but he did kick like a bay steer on them new gradin'-rules an' refused to conform to 'em. Said he was too old an' had been too long in business to start goug'n' his customers at his time o' life. So he got out o' the association."

"Bully for John Cardigan!" Bryce declared. "I suppose we could make a little more money by cheapening our grade, but the quality of our lumber is so well known that it sells itself and saves us the expense of maintaining a corps of salesmen."

"From what I hear tell o' the Col-

onel," Dan observed sagely, "the least he ever wants is a hundred and fifty per cent the best of it."

"Yes," old Zeb observed gravely, "an' so far as I can see, he ain't none too particular how he gets it." He helped himself to a toothpick, and followed by the head sawyer, abruptly left the room—after the fashion of sawmill men and woodsmen, who eat as much as they can as quickly as they can and eventually die of old age rather than indigestion. Bryce ate his noonday meal in more leisurely fashion and at its conclusion stepped into the kitchen.

"Where do you live, cook?" he demanded of that functionary; and upon being informed, he retired to the office and called up the Sequoia meat-market.

"Bryce Cardigan speaking," he informed the butcher. "Do you ever buy any pigs from our mill cook?"

"Not any more," the butcher answered. "He stung me once with a dozen fine shoats. They looked great, but after I had slaughtered them and had them dressed, they turned out to be swill-fed hogs—swill and alfalfa."

"Thank you," Bryce hung up. "I knew that cook was wasteful," he declared, turning to his father's old manager, one Thomas Sinclair. "He wastes food in order to take the swill home to his hogs—and nobody watches him. Things have certainly gone to the devil," he continued.

"No fault of mine," Sinclair protested. "I've never paid any attention to matters outside the office. Your father looked after everything else."

Bryce looked at Sinclair. The latter was a thin, spare, nervous man in the late fifties, and the generally credited with being John Cardigan's manager. Bryce knew that Sinclair was in reality little more than a glorified bookkeeper—and a very excellent bookkeeper indeed. Bryce realized that in the colossal task that confronted him he could expect no real help from Sinclair.

"Yes," he replied, "my father looked after everything else—while he could."

"Oh, you'll soon get the business straightened out and running smoothly again," Sinclair declared confidently.

"Well, I'm glad I started on the job today, rather than next Monday, as I planned to do last night."

He stepped to the window and looked out. At the mill-dock a big steam schooner and a wind-jammer lay; in the lee of the piles of lumber, sailors and longshoremen, tally-men and timekeeper lounged, enjoying the brief period of the noon hour still theirs before the driving mates of the lumber-vessels should turn them to on the job once more. To his right and left stretched the drying yard, gangway on gangway formed by the serried rows of lumber-piles, the hoop-horses placidly feeding from their nosebags while the strong-armed fellows who piled the lumber sat about in little groups conversing with the mill-hands.

As Bryce looked, a puff of white steam appeared over the roof of the old sawmill, and the one o'clock whistle blew. Instantly that scene of indolence and ease turned to one of activity. The mill-hands lounging in the gangways scurried for their stations in the mill; men climbed to the tops of the lumber-piles, while other men passed boards and scantlings up to them; the donkey-engines aboard the vessels rattled; the cargo-rafts of the steam schooner swung outward and inward with sling-loads of lumber.

(Continued Next Week.)

A RURAL MILK CAMPAIGN

During the week of May 15-21 an unusually successful milk campaign was conducted in Walworth County, Wisconsin, where the message of milk, the fundamental food, was carried into every home in the entire county.

Full co-operation was received from everybody, the mayors issued proclamations, the schools made milk posters and staged the Milk Fairy Play, the business men dressed their windows in "milk attire"—using the very splendid posters made by the schools and the National Dairy Council; they also tied their advertisements up with the Milk Week propaganda; the nine newspapers carried feature articles and advertisements; the picture shows co-operated in running milk films and slides; the local citizens gave support, likewise the women's clubs, the churches, and all other organizations within the county.

During the milk week there were 92 meetings held, addressed by 16 speakers, furnished by the organizations conducting the campaign. Preparatory to the mass meetings held each evening, oftentimes a parade was held.

The closing of the campaign came on Saturday at the county seat, where the band furnished music during the entire day, and where bread, butter and cheese sandwiches and ice cream cones were given away to nearly 10,000 people, who gathered for the festivities. Among other attractions, came the Milk Fairy Play, which was staged in the open in a very beautiful and pleasing manner.

The final results are not yet compiled, but preliminary reports indicate the campaign brought the following results: (1) An increase of 22 per cent in sales of brick ice cream for home consumption; (2) An increase of 19 per cent in consumption of butter; (3) An increase of 18 per cent in consumption of fluid milk; (4) An increase of 30 per cent in consumption of cheese; (5) A falling off of 34 per cent in the sale of so-called butter substitutes.

This seems to be the first county in the United States to put on a milk campaign upon so broad and comprehensive a basis. The need of such campaigns is very evident and the results that can be secured will justify other organizations in promoting this important work.

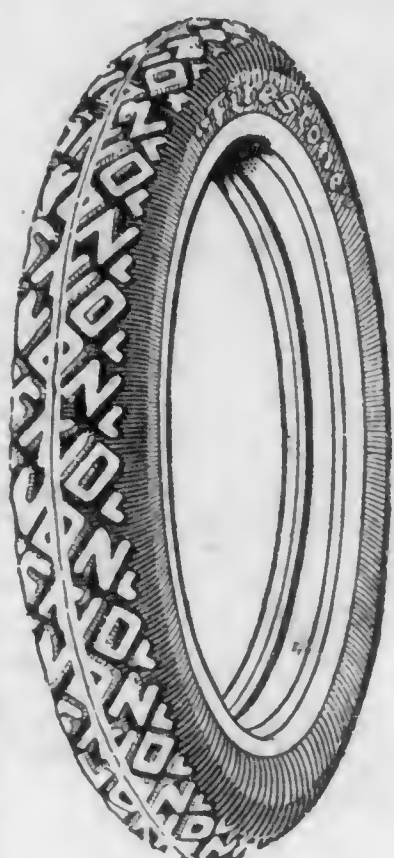
CARROLL COUNTY, MD. NOTES

Warm, dry weather which prevails is favorable for crop growth. Altho crops are in good condition, a good rain would prove a benefit. Wheat and rye are ripening. Barley is being harvested. Clover is being cut for hay; red clover appears to have been affected more by the freeze than alsike. Prospects are good for a large crop of timothy hay. Peas and strawberries are being harvested. The demand for strawberries exceeds the supply, prices ranging from 20 to 25c per box. Tomato and sweet potato plants are being set out. The acreage of tomatoes will be decreased while the acreage of sweets will probably be increased. Eggs are 20c dozen; young chickens, 40c lb.; old hens, 24c lb.; old potatoes have advanced to 60c bu. Wheat is quoted as \$1.40 bu.—Harry L. Rinehart.

Eggs that are gathered often, kept clean and cool and are candled and graded bring the best price.

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34x4½ " "	- - -	" "	54.90

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**End of
Volume**